

the skeptic

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THE DAY

THE DAY THE WORLD
THE WORLD DIDN'T

JULY 4 1999

DIDN'T

END

the Skeptic

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Notice

Temporary communications changes at *the Skeptic*

Barry Williams

Readers will have noticed that this issue of *the Skeptic* has arrived somewhat earlier than would normally have been expected.

Sadly, this is not evidence that the advent of our new computer has produced such startling efficiency around the editorial offices as to speed up production measurably. Rather it reflects the fact that during the early part of August, the editor will be visiting the UK on Skeptics' business concerning the World Skeptics Convention and other matters.

Then, from late August until the end of September I will be taking some of my annual leave in the UK, where I plan to visit such sacred spiritual sites as Broad Halfpenny Down, Lords, The Oval, Old Trafford, Trent Bridge, Headingley, Edgbaston, the grave of WG Grace, etc. As well, I will be researching claims that Stonehenge is an early model for the Sydney Opera House and that Loch Ness contains a Yowie in a wet suit.

Richard Lead, our Treasurer, will also be overseas for four weeks during late August and early September.

During my absence, various temporary changes in contact addresses will be in force.

Mail to Australian Skeptics, or *the Skeptic*, at PO Box 268 Roseville, will continue to be cleared daily by the President, Richard Gordon, and most will be handled expeditiously. Some mail may require a response from me and I can only ask that correspondents exhibit patience until my return.

Email messages should be sent to the address of the Secretary of Australian Skeptics Inc, Alynda Brown on:

AlyndaBrown@cit.com.au

Our phone (02 9417 2071) will be unattended from August 11 until October 1 and a message will be left on the answering machine advising that telephone messages can be left with Karen Stollznov on:

02 9982 4306

Karen will forward the messages to the appropriate person for action.

Urgent faxes may be sent to Richard Gordon on:

02 9416 3303



Around the traps

Bunyip

Two events in July provided a sobering commentary on the cult of "celebrity for celebrity sake" that has contributed so dramatically to the lowering of the credibility and the tabloidisation of much of the world's news media.

In one event, the accidental death of a young man of modest personal accomplishments, John Kennedy, precipitated a flood of media hyperbole, such as has been matched recently only by that brought about by the death of another youngish person of modest personal accomplishments, Diana, the Princess of Wales.

It is always regrettable when anyone dies at a relative young age, either as the result of an accident or for any other reason, but it happens every day in all parts of the world. Neither of these people had achieved, in their own right, anything of sufficient significance to give rise to the huge amount of semi-hysterical media coverage of their untimely deaths. In each case their fame rested on their family connections with other people, through marriage or by accident of birth.

As Richard Cadena points out elsewhere in this issue, the death of John Kennedy has also given rise to a rash of claims about a "Kennedy curse" and irrational allegations of conspiracy rivalling those surrounding the death of the late princess.

What makes this story particularly irritating is the other sad event mentioned earlier. It too concerned an accidental death which preceded Kennedy's by just a couple of days. In this case the victim was considerably older (69) and he was killed while riding a motorcycle.

He was Charles "Pete" Conrad, who, as the commander of Apollo 12, was the third man to set foot on the moon. A veteran of two Gemini and one Skylab missions, by any test Pete Conrad was a man whose real achievements in the history of human endeavour has rarely been matched, yet his death rated little more than a footnote in the media. It was made more poignant by the fact that it occurred just days before the 30th anniversary of the first Moon landing.

* * *

While we're giving the media a serve, our readers will no doubt be distressed to learn that *the Skeptic* will not be conducting an inquiry into media ethics in Australia. Yes, we realise that puts us at odds with almost every other organisation in the country, official, unofficial or simply self-important, but there comes a time when one must conclude that enough is sufficient.

At *the Skeptic* we proudly proclaim that it is "A journal of fact and opinion", relying on the intelligence of our readers to allow them to discriminate between the two (ie it is a *fact* that we proclaim that it is "A journal...", it is our *opinion* that our readers are intelligent, albeit one with which we have no doubt you will agree).

In our observation of the rest of the media we note that they largely consist of commentators whose opinions, on the one hand, are nothing but regurgitations of predigested, half-baked, commercially or ideologically driven, intellectually insulting pap, or on the other hand, are incisive, hard-nosed, fearless and cogent commentary.

Where any particular commentator falls within that spectrum depends entirely on the congruence of the expressed opinions with one's own.

* * *

Readers will no doubt be stunned (perhaps elated, or even totally indifferent) to learn that, after 44 years and a few months, the editor of this journal has given up smoking. While suffering from a particularly virulent dose of 'flu, during which, to the utter delight of his colleagues and loved ones, he completely lost his voice, he was heard to whisper "Bugger it, I'm giving up".

Shortly thereafter, he was seen to enter a pharmacy, later to emerge with a package containing a certain brand of nicotine patches. (While we would like to mention the brand, in the light of the plethora of media ethics inquiries mentioned above, we will refrain. Suffice it to say that one part of the multinational pharmaceutical conglomerate involved was once responsible for providing the wherewithal to sponsor the career of one of

the most colourful characters ever to wield a baton in front of a symphony orchestra.)

Skeptics who have come into contact with the editor during this stressful period have reported him, variously and thesauriously as : cantankerous; ill-tempered; grumpy; choleric; irascible; irritable; tetchy; peevish and testy.

Members of his immediate family and close friends all agree with these assessments and have expressed their delight that his ordeal has effected absolutely no discernible change in his demeanour.

* * *

On the other hand, the editor has been more than a little heartened to hear about all the good things being attributed by medical researchers to his other major vice, tea drinking. Results from recent studies indicate that tea is very beneficial in reducing the incidence of both skin cancer and some heart disease.

However, on one point he remains adamant; the person who invented the tea-bag should be catalogued alongside Hitler and Stalin as enemies of humanity.

* * *

We are not so concerned here about whether media people are venal or not (though, for a large fee we are prepared to become *very* concerned). We're more worried about their presentation, with varying degrees of enthusiasm of irrational and potentially harmful clap-trap. This is an ever-present problem, but it seems to be getting worse as the 000 on the calendar rolls closer, and it's also a trend in which Auntie ABC is just as culpable as the commercial media.

F'instance, we heard one of the commercial radio pundits recently (just after the tragic deaths of the adventure tourists in Switzerland) giving a plug to the "psychic" who infests his station on the weekends (we wouldn't be surprised if her name was Fenella or Fiona or even Philomena, but, wouldn't testify to it either. We just weren't listening all that closely).

Pundit leads in with something along the lines of "Whether you believe in them or not, some of these psychics seem to get things pretty right at times" and then played a clip in which Fenella (or Fi or Phil) was interviewing Richard Stirling (or Sterling) a "famous psychic". (As the conversation took place before the Swiss tragedy, it must have been the weekend of July 24-25.)

"What's coming up next Richard?" she enquired, to which he responded in words very close to "I see a large dam bursting, probably caused by an earthquake, a lot of people drowning and maybe a bridge swept away."

Cut back to the pundit who said, "Well they weren't exactly right, but when you think of the Swiss tragedy, they were pretty close".

Close? There was no earthquake, there was no dam burst and there was no bridge wash-away. The only similarity is that people were drowned, and we would guess that drowning is by far the most common cause of death in natural disasters and other major calamities. That's how rumours of a psychic's uncanny accuracy start, giving them credit where it is most definitely not due.

* * *

Readers might recall that Gene Shoemaker, geologist and co-discoverer of the Shoemaker Levy comet that hit Jupiter a few years ago, was later killed in a car accident in northern Australia. Now we learn that some of his cremated ashes have been deposited on the Moon by a NASA probe. This is the first time human remains have been interred in an extra-terrestrial location.

* * *

Some interesting news has emerged on the religious front in the past few weeks.

First we see the Pope telling an audience that neither "Paradise" nor "Hell" were actual places, but referred more to the relationship Christians had with their god. Various religious commentators have pointed out that this is not really a radical departure from tradition, as the notion of each state as a physical location has never had much, if any, scriptural support.

The popular images of these places owed more to the imagination of mediaeval (and later) writers, not

forgetting the acts of various clergy who doubtless called on these images to keep their recalcitrant flocks under control. In more recent times, these notions have been promoted by cartoonists, for whom the burning "damned" and the harp-playing, cloud-lounging "saved" are staple images rivalled only by the single tree desert island.

Next, the Archbishop of Canterbury caused a bit of a stir among the tabloids by saying that while a Christian could be very sure that Jesus had lived and had been crucified, he could not know with equal certainty that Jesus had been resurrected. He went on to say that he was personally certain of the latter, but that it was an act of faith, and not of knowledge on his behalf.

I would guess that neither of these statements would cause much surprise to educated Christians, but they must have caused a great deal of rending of garments, wailing, and gnashing of teeth among the fundamentalists and other fringe groups.

* * *

Apropos fringe groups, and despite our natural reluctance to mock the afflicted, we just have to bring you an update on a item we mentioned in the last *Traps*.

Readers will remember our report that Answers in Genesis had gone commercial with their comical *Creation ex Nihilo*, by having them placed in newsagents. Well it seems they weren't exactly walking off the shelves and AiG sadly reported to their faithful recently that, of the 5000 extra copies they had printed, only some 750 had been sold (15%). They did say that the commercial agent who had placed the magazines "was not too happy" with the result. At the end of this confession of incompetence, they thanked God (though for what, we're not sure).

In case any cynical Skeptic claims that this is simply proof that rubbish doesn't sell, they should be aware that equally rubbishy magazines, such as *Nexus* and *New Dawn*, sell a lot better than that. Maybe AiG should have included a few more UFO stories, conspiracy theories and adverts for quack medical devices.

* * *

Anyone who thinks that creation 'science' is just a way of raising funds to provide jobs for otherwise unemployable science graduates with a bad case

of religious mania, will have this view confirmed by a report from the Institute for Creation Research (ICR) the US equivalent body to AiG.

The August issue of their propaganda sheet *Acts and Facts*, reveals that the ICR has a five-year plan for discrediting radiometric dating once and for all, to "remove this stumbling block" to their fantasies. Note they are seeking to "discredit" radiometric dating, not seeking to find a better scientific explanation. Not surprisingly they are seeking money from the flock to carry out this plan. This issue also reveals that the second law of thermodynamics was "enacted by God following Adam's sin, introducing the great Curse of pain, decay, and death ..."

Is it any wonder that people who can spout this sort of drivel are unemployable in any real field of science, regardless of whatever qualifications they might have acquired?

* * *

Armageddonists are geddon (sorry) their knickers all topologically twisted at the approach of a new millennium and loudly, shrilly (and sillily) are their cries being heard in the land.

Here's a tip for Skeptics. When a doom-crier is heard making a public prediction of imminent oblivion, make an equally public offer to purchase all their worldly assets, immediately and in cash, at 10% of their market value, in exchange for a watertight contract to all their property, possession to take effect 24 hours after the expiry of their nominated date of extinction.

Do not expect to be killed in the rush of acceptances of this generous offer.

* * *

A very strange story from Brisbane came to a conclusion early in August. It concerned the gruesome murder, a couple of years ago, of a woman who had been the president of a cat society.

On August 2 one Andrew Fitzherbert was found guilty of her murder, based on forensic evidence showing his DNA being present in very small traces of blood found at the scene.

Why is this of interest to the Skeptics? Well, Fitzherbert was described in evidence as a tea shop owner and a *psychic*.

Science 1 - Mysticism 0.



The Kennedy curse?

Richard Cadena

With the death of John F Kennedy Jr, newspapers around the globe have had at least one story on the 'curse' of the Kennedy family. Listed below are a compilation of the events that are noted as part of the curse.^{1, 2, 3}

1) 1941: Rosemary Kennedy, daughter of Joseph and Rose, is diagnosed as mentally retarded. She was given one of the first frontal lobotomies, which failed, and has been institutionalised ever since. She's now 80 years old.

2) 1944: Joseph P. Kennedy Jr., son of Joseph and Rose, is killed in a plane crash in 1944 during World War II bombing mission. He was 29.

3) 1948: Kathleen Kennedy, who had been married to William John Robert Cavendish, the Marquess of Hartington, who was killed in World War II, dies in a plane crash in France after attempting to fly over mountainous terrain in a small plane in dangerous weather. She was 28.

4) 1963: President John F. Kennedy's second son Patrick Bouvier Kennedy is born nearly six weeks premature on August 7, 1963. He dies two days later.

5) 1963: John F. Kennedy is assassinated in Dallas on November 22, 1963. He was 46.

6) 1964: Edward M. Kennedy, JFK's brother, is critically injured in plane crash; an aide is killed.

7) 1968: Robert F. Kennedy, JFK's brother, is assassinated in Los Angeles. He was 42.

8) 1969: July 18-19 Late at night or in the early morning, Edward M Kennedy drives a car off a bridge on Massachusetts' Chappaquiddick Island after a party. Aide Mary Jo Kopechne is later found dead in the submerged car. The controversy (Kennedy didn't report the accident for at least 10 hours) over the incident effectively ended his presidential aspirations.

9) 1973: Joseph Kennedy, Robert's son, is involved in a car accident that leaves a female passenger paralysed for life.

10) 1973: Cancer strikes Ed Kennedy's son, Edward Jr., has his right leg amputated because of cancer.

11) 1984: Robert Kennedy's son David dies of a drug overdose in a hotel after being ousted from the family vacation home at Palm Beach, Florida.

12) 1986: Edward Kennedy's son Patrick seeks treatment for cocaine addiction as a teenager.

13) 1991: William Kennedy Smith is charged with rape after he had spent a night drinking and partying with his Uncle Edward Kennedy. He is acquitted later that year.

14) 1997: Robert Kennedy's son Michael, who was accused of having an affair with his family's teenage baby sitter, starting when she was 14, is killed hitting a tree in a skiing accident in Colorado. He was 39.

15) 1997: Joseph Kennedy, a Massachusetts congressman, announces he is abandoning plans to run for governor after his ex-wife wrote a book detailing their troubled marriage and criticising him for asking the Roman Catholic Church for an annulment.

16) 1999: JFK Jr dies in a plane crash at night over the ocean. He was an inexperienced pilot, had a recent foot injury and was not able to fly on instruments only. He was 38.

The events tend to fall into three categories although some overlap. There are those events that are not that remarkable or unusual. A lobotomy on a retarded person fails in 1941, leaving them institutionalised. A bomber pilot is killed during an attack in World War II. Another person dies in World War II. Find your own further examples above.

Then there are events where the behaviour chosen by the person is risky or reckless. Drug use, having sexual liaisons (if you don't want to get caught) and flying a plane in unsuitable conditions for your abilities. Even John F Kennedy Jr wrote a column calling his cousins the "poster boys for bad behaviour".

Of course there are events that are unfortunate and not under the control of the participant. However, even the assassinations occurred in a time when others such as Malcolm X, Martin Luther King and George Wallace were also targeted.

There are also some events that could be viewed as the opposite of the curse. The Kennedy Blessing, perhaps? Edward Kennedy survives a plane crash that kills his companion. Edward Kennedy survives an auto accident that kills his companion. Joseph Kennedy survives a car crash that leaves his companion paralysed for life. Edward Kennedy Jr survives cancer. Michael Kennedy is not charged with statutory rape. William Kennedy is acquitted of rape. Patrick Kennedy, Robert Kennedy Jr and Christopher Lawford (Patricia

Continued p 10 ...

The King of Terror: Misguided belief in the end of the world

Trevor Case

"The year 1999, seventh month, from the sky will come a great King of Terror..."
(Nostradamus, 1555, *Century X, Quatrain 72*)

On the eve of the third millennium we can look back with awe upon the scientific and technological achievements of the past century. The time we spend on the monotonous chores of daily living has diminished; we have escaped the grip of many of our most feared and devastating diseases and illnesses; and we have even escaped the confines of our own planet to explore other worlds. Importantly, none of these advances would have been possible had we abandoned science and relied instead on superstition and pseudoscience. It is all the more remarkable then that as the millennium draws to a close, most people continue to cling tightly to belief in the paranormal or supernatural while, at the same time, enjoying the benefits of scientific and technological advances. This inconsistency is perhaps most evident in the contemporary resurgence of a belief that human kind will face the end of the world before the new millennium arrives.

For many, this doomsday superstition has its basis in the prophetic writings of the 16th century seer Nostradamus. The French astrologer and physician's 1555 work, *Centuries*, comprised approximately one thousand four-line predictions called quatrains. Nostradamus deliberately obscured the meanings of these predictions by using anagrams, allusion, and symbolism, apparently to avoid persecution from the Inquisition. Moreover, comprehension of his prophecies is further complicated by his use of early Modern French, together with archaic Latin, and Greek. Consequently, many of his prophetic verses appear as gibberish, rendering it impossible to determine, with any certainty, the specifics of dates, events, or places to which he refers. Nevertheless, over four hundred years later Nostradamus' obscure writings have attained an almost religious status to some.

The verse that has gained recent notoriety (*Century X, Quatrain 72*) by apparently foretelling the end of the world is as follows:

The year 1999, seventh month,
From the sky will come a great King of Terror.
To bring back to life the great King of the Mongols,
Before and after Mars to reign by good luck. *

Depending on to which of the many available interpretations one refers, this verse has been taken to mean that in July of 1999 an asteroid, nuclear weapon, alien invasion, or some natural disaster will devastate Earth.

There is some disagreement about what constitutes the seventh month. Specifically, Nostradamus may have been referring to either the Julian calendar or the Hebrew calendar. Accordingly, the seventh month of 1999 could end as late as October 10. There is also much disagreement about what is meant by the third and fourth lines, with some saying that the 'King of the Mongols' refers to China or the anti-Christ, and that 'Mars' refers to war. Nevertheless, the general consensus of the believers is that something very bad will occur within the next few months.

The 16th century prophet's prediction has inspired the emergence of numerous doomsday cults, particularly in Japan (*Time*, 12/7/99). Elsewhere, many more are uncomfortably curious about forecasts of pre-millennial doom. The fanatical believers have been interpreting almost any unusual event as evidence of the impending doom. For example, recent events that have been listed

as portents of the prophesied end include unrest in Korea, the Kosovo conflict, a meteor in New Zealand, and even Martina Hingis' premature exit from Wimbledon (*Australian*, 8/7/99; *Time*, 12/7/99).

There are also dozens of web sites and discussion groups devoted to Nostradamus' prophecy. The following exchange posted on a message board dedicated specifically to Nostradamus' 'King of Terror' prophecy attests to the seriousness with which some people are treating the prediction:

Person A: With all this hype about C10 - Q72 [*Century X, Quatrain 72*] lately, when is it finally going to happen? We are halfway through the month and yet nothing! I know there's still a few more weeks to go before the end of the month, but the suspense is driving me crazy! Lets just hope N. [Nostrada-



Nostradamus (not a recent picture)

mus] was wrong on this one and we can all breathe a sigh of relief!!!

Person B: ...All this stuff is freaking me out too but you have to admit, it's kind of exciting. It's really hard to decide who and what to believe because translations can be taken in so many ways. Everyone has their own opinion of what will happen. Hopefully there will be no worldwide devastation and mass death, but from what I've read that may be the way it goes.

(from <http://www.casualforums.com>, *Century X*, Q72, 17/07/99).

Unfortunately, there is little doubt that there are many people who take Nostradamus' doomsday predictions seriously. The main reason many are impressed by such predictions almost certainly stems from the fact that, like most other psychic predictions, Nostradamus' prophecies are extremely vague and general. Consequently, his predictions are nearly impossible to falsify and can be applied to almost any event. Indeed, Nostradamus' predictions are almost always understood after an event has occurred, not before. Nostradamus' enduring popularity may also be linked to his plausible excuse for using vague and uninterpretable language (avoiding persecution), and the sense of mystery invoked by his use of archaic language. In any case, these characteristics of his writings have provoked a stronger belief in the 'King of Terror' doomsday prediction from his followers than Nostradamus apparently held himself. After all, Nostradamus' prophecies continue until the year 3797!

While it is clear that Nostradamus' prophecy is mostly responsible for the recent fears of the end of the world, doomsday epidemics have occurred since well before his time. Interestingly, the descriptions of past panics reveal uncomfortable parallels to the present. For example, in his historical catalogue *Extraordinary Popular Delusions and the Madness of Crowds* (1841/1995), Charles Mackay described a popular hysteria that seized Christendom towards the end of the 10th century. This popular belief entailed that the end of the world would occur in the 1000th year, as prophesied in the Apocalypse. Despite discouragement from the church, people believed "...that the Son of Man would appear in the clouds to judge the holy and unholy" (p.257). Armies of terrified pilgrims made their way to Jerusalem for the scene of the last judgment. Buildings and churches were left to ruin. Their conviction was so strong that most of these people had even given up all of their possessions. Mackay wrote that as the end of the first millennium drew closer, natural phenomena such as thunderstorms or meteors produced terror, "...[bringing] the whole Christian population out into the streets to weep and pray" (p.258). Well, at least they confined their portents to natural phenomena, not tennis players.

Unfortunately Mackay does not tell us what the Christian population did when the world did not end. Did these people who had sacrificed so much as testimony to their belief just shrug their shoulders and walk away? To understand how people who have abandoned all of their possessions, left work and sometimes family might react when the doomsday prophecy fails, we need to examine a case from more recent history.

Earlier this century a UFO cult made public their belief that the world would be destroyed by a deluge on 21 December 1955. The leader of this group, Mrs Keech, believed she was in telepathic contact with space aliens who had warned her of the end of the world. Most of the members of the group had left their jobs, sold their possessions, and moved in with Mrs Keech. The group believed that they had been specially selected to be rescued from the destruction of the world by the space aliens. On hearing about the existence of the group, Leon Festinger, a social psychologist, and his co-workers decided to observe Mrs Keech and her followers. These researchers were particularly interested in how the group would react when doomsday failed to occur.

Festinger aimed to do more than simply describe the activities of this group: he aimed to use his theory of cognitive dissonance to predict what the group would do when the end did not come. According to Festinger, when people do one thing, but think another, they experience a state of negative emotional arousal. In an attempt to reduce this uncomfortable emotional state people usually change their attitude to match their behaviour. For example, if you buy a pair of runners for \$150 (behaviour) and then you see a similar pair for \$70 you might think "I've been fooled. I spent more money than I needed to" (attitude). In this example there is a mismatch between what you have done (purchased the shoes) and what you now think ("I've been fooled"). One way to reduce this dissonance between what you have done and what you think, would be to change the way you think to match what you have done. Accordingly, you might tell yourself that the quality of the shoes you have bought is superior to the cheaper product. You could also seek reassurance by spotting like-minded others who are wearing the same expensive runners: if the runners are popular they must be better.

Festinger used his theory of cognitive dissonance, to explain the reactions of Mrs Keech and her followers when her prophecy about the end of the world failed. Each member had a great deal invested in the group: many had sold their possessions, given up their jobs, and even moved in with Mrs Keech. When the world did not end as predicted it would have been devastating for these people to simply abandon their faith. Festinger predicted that the failure of the members to confirm their pessimistic forecast would only increase their commitment to the group and the fervour of their overall faith. Indeed, when the doomsday prophecy was not fulfilled, Mrs Keech and her followers, who were previously reluctant to preach, decided they had been given more time to proselytise and recruit members.

Mrs Keech and her followers had invested a great deal in their religious faith (behaviour). When the end of the world prophecy did not eventuate the group might have thought "We've been fooled. There are no aliens. Our whole faith is just poppycock" (attitude). As in the running shoes example above, there was a mismatch between what the members of the group had done (made sacrifices for the group) and what they thought (we've been fooled). Consequently, they changed the way they thought to match what they had done. In this case they attempted to seek reassurance

that their faith was not misplaced by converting others. Bolstering the group membership increased the perceived credibility of their faith.

Festinger's research provided an insight into why people would maintain their belief in the face of unsupportive information. As for Mrs Keech and her followers, belief in a specific doomsday prophecy often represents only a small part of wider system of religious or occult beliefs. For most, the continuance of the world without incident past a prophesied date is disconfirmation of the prophecy. However, to believers the failure of a prophecy will usually increase the fervour of their faith. It will be interesting to see how those who believe in Nostradamus' prophecy will deal with disconfirmation. We might expect that in the first instance people will move the goal posts for the date of 'the end'. This is made all the more easy by the vague and oblique nature of the four-line prophecy. When disaster still fails to occur, fanatical believers could be expected to react with steadfast commitment to their faith.

By and large, reactions to failed doomsday prophecies are reasonably innocuous. However, it is important not to underestimate the lengths that some committed believers will go to for their beliefs. If people have made a strong commitment to an unfalsifiable belief in the end of the world, one sure way of avoiding the possibility of unbearable dissonance, especially if they have given up a great deal (eg, possessions, family etc), is to suicide before the prophesied doomsday. This way they are

(a) making the ultimate sacrifice to prove the strength of their conviction, and

(b) won't have to face the unbearable humiliation if they are wrong. This may partly explain why so many took their lives in the Heaven's Gate tragedy.

Perhaps we have not come so far since the turn of the last millennium. The recent media reports of support for Nostradamus' 'King of Terror' prediction are testimony to the fact that despite our scientific and technological advances many people are as gullible now as they were a millennium ago. While this persistence of belief in superstition is interesting in itself, what's more surprising is the reactions of believers when the prophecy fails. Ironically, disconfirmation of the prophecy only bolsters belief, rather than attenuating it. Thus, for at least some people, the approach of the new millennium does not inspire optimistic contemplation of new horizons. Rather, for those who believe in the prophecies of Nostradamus the future is as bleak as it appeared to the Christians at the close of the last millennium.

*This translation and most of the information in this paragraph were found at the following web site: <http://www.sightings.com/ufo4/quat.htm>

References

- Festinger, L., Riecken, H. W., & Schachter, S. (1956). *When prophecy fails*. New York: Harper & Row.
Mackay, C. (1841/1995). *Extraordinary popular delusions and the madness of crowds*. Hertfordshire: Wordsworth.

... Kennedy curse from p 7

Kennedy's son) all survive drug addiction to become contributing members of society.

People certainly try to find coincidences or patterns in these events. It was suggested in Melbourne's *The Age* newspaper that:

It was spooky enough that the suitcases and other debris eventually washed up on the beach just near the holiday home of his late mother, Jacqueline Kennedy Onassis. It was as if there had been some terrible omen in the fact that this weekend was also the 30th anniversary of Chappaquiddick - on the other side of the island from where the plane went down.⁴

The Kennedys, a large family, live in the area and have for a long time. Nothing spooky there.

The other 'curse' idea missed in *The Age* was mentioned on radio (FM 101.9) that the curse started with the moon landing (because John F Kennedy was catalyst for the moon landing). This, of course, ignores the first 7 events. However, if the curse only started after it was *decided* to go then only the first 3 events are ignored.

It has also been said that the death of John F Kennedy Jr occurred 30 years to the day man stepped on the moon or 30 years since Chappaquiddick. So, for the record, here are the times of these events. All times are (US) Eastern Standard Time, the time zone Massachusetts is in.

July 16, 1969 at 9:32am Apollo 11 launched

July 20, 1969 at 10:56pm First step on the moon

July 24, 1969 at 12:50pm Astronauts return to Earth

July 18/19, 1969 11:00pm -1:00am Chappaquiddick

July 16, 1999 at approx 9:45pm JFK Jr dies

The other factor to take into account is the size of the Kennedy family. Only counting Joseph and Rose Kennedy, their children and grandchildren gets the count up to 48.⁵ Because we are pattern seeking animals, we see images in clouds, constellations in the stars and curses in tragedies.

Notes

¹ <http://www.cnn.com/SPECIALS/1999/kennedy/stories/tragic.kennedys/index.htm>

² <http://www.javawindow.com/interactive/specials/9907/kennedy.tragedy.glance/>

³ <http://www.theage.com.au/daily/990719/news/specials/news2.html>

⁴ <http://www.theage.com.au/daily/990719/news/specials/news2.html>

⁵ <http://www.javawindow.com/interactive/specials/9907/kennedy.familytree/>



Prophets of doom or profits of gloom?

Barry Williams

As the Earth rolls inexorably along in its orbit around the Sun, and as the measuring device that species *homo sapiens sapiens* invented to keep track of the passing of the days, the calendar, rolls inexorably along to the point where its last three digits are all showing 0, a collective insanity seems to be infecting members of said species.

When is the millennium?

At the "mad but harmless" end of the spectrum lie all those who are planning to celebrate with wild abandon as the clock ticks down to midnight on December 31, 1999. At the stroke of midnight (or one nanosecond past it) they will roar with joy, fireworks will blaze out, bells will ring, bottles will gurgle, Auld Langs will Syne as never before, as all and sundry celebrate the end of one millennium and the beginning of a brand new one. And they will be right - they will be celebrating some date that marks exactly 2000 Earth orbits of the Sun after some other date. Of course, what they will be celebrating holds no special place in the most common calendar in use today, because it will represent exactly 2000 years since the first nanosecond of the year 1 BC, a totally undistinguished year in human affairs.

We all know the story. In 525 (as we now know it), the pious Scythian abbot of a Roman monastery, one Dionysius Exiguus (Skinny Dennis to his mates at the pub) published his *Cyclus Paschalis*, in which he fixed the dating of the Christian era. At the time, people in the Roman Empire and its related polities were still using a calendar, albeit many times revised, dated from the foundation of the Roman Republic (753 BCE in our style) and brought into being, modified and codified by Julius Caesar (45 BCE) - the Julian Calendar.

Dionysius was actually looking for a better way of calculating the date for Easter on behalf of the Western Christian Church, to get away from the mystical methods of the Eastern Church that were based on the old Jewish lunar calendar, by way of the Alexandrian Greeks. While he was engaged in this interesting task it must have occurred to him that it was a bit much for good pious Christians to use a calendar that celebrated the Pagan Roman Republic, so he did his sums and fixed a year in which he calculated that Jesus had been born and nominated that year as 1 *Anno Domini* (the Year of the Lord) or 1 AD. Dates prior to that have come to be called, again by pious folk of the Christian persuasion, BC or Before Christ. Less pious folk, or those of other persuasions, usually refer to the dates AD as CE (or common era) and BC as BCE (before the common era).

Now that is all very well, but dear old Dennis got his sums wrong and today not even the most intellectually challenged creation 'scientist' believes that Jesus was born on December 25, 1 AD. Guesses vary about the correct dates (there is very little evidence for Jesus in the secular record) between 7 BCE and 7 CE, with the smart money settling around 4 or 5 BCE. So, if any-

one wants to celebrate the second millennium of the birth of Jesus, then they should have done it some years ago.

But the main reason why our calendar doesn't change millennia (or centuries) when there are a few 0s on the end is because Dionysius, in common with all of his other European contemporaries, had never come into contact with the concept of zero. Now we are so accustomed to counting from negative to positive quantities eg -1, 0, +1 that zero seems perfectly natural, and it is hard to remember that 0 was only recognised by Europeans (who borrowed it from the Arabs, who had in turn borrowed it from the Hindus) as recently as the 11th or 12th centuries, at about the same time as the other Arabic numerals began displacing the old Roman numbering system.

There are many calendars in use in different cultures around the world today, but by far the most widely used one is the (modified) version designed by Dionysius. And as our calendar goes directly from 1 BCE to 1 CE without passing 0 (and without collecting \$200), those who celebrate a new millennium on Jan 1, might well be celebrating 2000 years from something, but not from the (postdated) beginning of our calendar. Not that it matters; a party is a party is a party (as Dorothy Parker could well have said).

The end is nigher than you think

So much for the mad but harmless end of the spectrum. Let's now look at some of the darker forms of "millennium madness".

As good Skeptics, we have all been expecting that the appearance of all those 0s (putting all the ducks in a line as a cricketer might say) on the calendar would generate various claims about changes to the way the world will operate in the new era and, based on what has happened in the past, we have also been anticipating that many such claims would focus on the "End of the World" (sometimes accompanied by the qualifier, "As We Know It").

Our expectation has not been in vain - since the beginning of 1998 these claims have been proliferating at an alarming rate. Most of them rely on readings (or misreadings) of all the old standby "prophets", not to mention the tribal myths of various societies (Native American predominating, as would be expected, given the national origin of most of the doom criers) and the like. With some of them it is difficult to ascribe to them any particular origin; the spin applied would gladden the heart of Shane Warne, even on his best day, but tends to confuse everyone else. Most have sought to achieve a patina of scientific respectability by interspersing (out of context) pieces of information from astronomy, oceanography and geology (asteroids, tsunamis, vulcanism and plate tectonics featuring strongly).

So prolific have these harbingers of doom become

that it is difficult for even the most dedicated Skeptic to keep abreast of them all. Here at *the Skeptic* our task was made easier by a pseudo-documentary that first saw the air on the 9 Network in September 1998. If *Prophecy and Predictions: Threat or Warning* missed any of the scary scenarios for the 000 year, then they must have been extraordinarily obscure ones indeed. Accustomed as we are to the amount of this credulous nonsense emanating from the USA, it might give us a perverse sort of pride that this one was locally produced.

It was all down to a former pop-singer, Ronnie Burns and his associated company Ronnie Burns Entertainment. Now here, in the cause of the new ethical journalism that is all the rage these days, I have to confess an interest. At least a year prior to the screening of this show I spent a long three hours in a room at the Gazebo Hotel in Kings Cross, Sydney, being interviewed about "a Skeptic's perspective" on the various "prophecies" involved. Not that I was paid for the interview, but they did pay for the cost of parking my car.

It occurred to me at the time, given the aggrieved tones adopted towards me by both Mr Burns and his producer each time I poured cool water on one or other of their fancied scenarios, that there was little chance of the Skeptical view getting much beyond the standard 30 seconds air-play allocated to Skeptics in this type of show. In the event that was a wildly optimistic estimate - I didn't get onto the screen at all. Now I'm not complaining about not appearing as I doubt if my reputation could have withstood being associated with such a load of absolute twaddle. However, if you are one of those inveterate end title readers (the sort who know the name of the key grip on every film made since 1900) you would have seen my name nestled among 20 or so others who were given "special thanks". I have no idea why the producers thanked me, because if they'd taken any notice of anything I had said they wouldn't have made quite so many egregiously stupid statements. My faith in the essential rationality of at least some members of the human species was somewhat restored, when, during a coffee break in the taping, the camera operator confided to me, "Gee mate, I'm glad you showed up. I've been around the world taping interviews for this show and you're the first one who has made any sense".

But now to the show itself (and here I must express my indebtedness to a *Skeptic* subscriber and friend, Dr David Maddison who, by exhibiting a great deal more fortitude that I could have mustered, managed to note down all the specific "predictions" made in the entire two hours. His notes have been invaluable in compiling this report.)

Ronnie Burns fronted the show and was shown looking and sounding suitably grave, in suitably picturesque locations, as he catalogued the various threats to Earthly health being presaged by the "End of the Millennium". Actors' voices, suitably sepulchral, iterated the words of such long dead prophetic luminaries as Nostradamus, Mother Shipton, John of God, Edgar Cayce, Uncle Tom Cobley and all. A couple of unnamed Hopi Indians enumerated their tribal legends which allegedly predicted both world wars, and the next one, not to mention the railways and MacDonalds. Assorted talking heads pontificated on apocalyptic catastrophes, all

accompanied by stock newsroom footage of earthquakes, cyclones, volcanoes, with some interesting shots of ocean waves imposed on the Sydney skyline, masquerading as a tsunami.

Regrettably, Ronnie's research was rather remiss. In a scene shot in the King's Chamber of Khufu's pyramid (surely the most maligned and misattributed monument on Earth), he stared gravely down the barrel of the camera and observed that he was directly beneath the apex of the pyramid. Wrong! The King's chamber is several metres from the centre line of Khufu, as a cursory glance at any book on the pyramids would have clearly shown. There were many other equally blatant errors of fact in the programme.

The message from all this was that the world is going to suffer, *inter alia*: a meteor strike; a sideswipe from the tail of a comet; eruption of a new sun in the solar system; switching poles in a mighty Earth roll-over effect; a devastating nuclear war; Atlantis re-emerging; death, destruction and general unpleasantness for the next couple of years (at the very least). It seemed to be lost on the host, that while he was piling catastrophe on top of cataclysm and expert (ancient and modern) on top of authority (old and new), most of the people involved were talking about entirely different things. There was no consensus at all about the disasters that were supposed to be just around the corner; just a sort of perverse and mutual glee that they were going to happen.

But Ronnie's **real** message was that everything would be OK if only we would all adopt a nice, caring, spiritual, new age (add your own favourite vacuous adjective) approach and then the survivors could all live in Love, Peace and Harmony for a thousand years, in a sylvan valley somewhere, along the banks of a river somewhere (which, with any luck, will have Rob Sitch and Tom Gleissner fishing in it).

Well that's Ronnie Burns' version of the Apocalypse and I recall reading that he has now retired to a suitably arcadian rural retreat to be on hand to help the survivors adapt to the realities of the New Harmonious Age. I hate to rain on his parade, but if any catastrophic event of anything like the severity of those depicted in this programme ever did occur, then peace, harmony and singing choruses from *Hair* about the Age of Aquarius would be forced to take a back seat to the necessity of avoiding being eaten by the more aggressive and less harmonious neighbours.

This programme was a specious pile of tripe which shouldn't have caused real concern in anyone - nevertheless, there are people who believed it and who were alarmed by it. At *the Skeptic* we have received quite a number of calls from people who have been frightened, or whose children have been frightened, by this show and others like it and by the proliferation of equally irresponsible magazines preaching the same sort of doom-filled nonsense. They have been seeking our reassurance that asteroids are *not* going to hit the Earth or that tsunamis are *not* going to devastate coastlines. Of course, as Skeptics who look at the natural world through the eyes of science, we can offer no such reassurance because those naturally occurring events are always possibilities. All we can say is that there is not a scrap of evidence that Nostradamus, nor anyone else,

Continued on p 17...

Gloom, doom and celestial affairs

Steve Roberts

Earlier this year, I predicted that the Skeptics would be having a bumper year in 1999; citing the following phenomena that would generate enough superstition and antiscience to keep us all busy.

Millennium panic in relation to the Y2000 bug, which is now in everyone's mind and will rise to a crescendo of panic as the year staggers to a close. Faced with fear of the unknown, people have historically made recourse to any source of prediction or insurance. Actually the Y2K effect has already begun to change our commercial infrastructure, for example - banks and large companies are doing very little development of new services and products as they devote all their programming efforts to Y2K checking. Thus a small recession is occurring for the smaller industries that would normally supply the bigger companies.

Nostradamus mentions July 1999 - one of the few specific dates to be mentioned among his many tomes of deliberately woolly obfuscation. I had better quote the whole flaming quatrain because it will come up again and again, and we need to be aware of it; it has already been heavily leaned on by Nostradamus fans since about 1990 as a prediction for WWIII, the coming of the Messiah and the end of the world (no, I'm not kidding).

Voila le quatrain X.72 in le Original Mediaeval French:

*L'an mil neuf cens nonante neuf sept mois
Du ciel viedra un grand Roy d'effrayeur
Resusciter le grand Roy d'Angolmois
Avant apres, Mars regner par bon heur.*

Meaning something like

July 1999
A great, frightening King will come from the sky
To raise again the great King of the Mongols
Before, after, Mars rules as it wishes.

That's what it says - and no, I am not going to try to interpret it. When this prophecy - whatever it is - failed to eventuate in July 1999, people noticed that the first line actually says "the year 1000 9 100 90 9 7 months", and are doubtless, as you read this, frantically plying their calculators to make other dates fit ...1990 + 97 months = Feb 1998, etc.

Meanwhile, here are a few celestial occurrences during 1999 that could cause the prophets of doom to get into a lather.

Total solar eclipse 11/8/1999. Although these happen now and then, this one is probably the only one in our

lifetimes that is visible from Britain, with the consequent transfer of interest into the Anglophilic culture of Australia. Probably of more interest is the fact that the eclipse is visible only from the sharp end of Cornwall, at the height of the summer holiday season, so that millions of Poms will try to cram themselves into the area, making the annual crush much worse than usual. There are plans to use the Army to close the whole area off, giving rise to ugly scenes bordering on mass riots. The large numbers who do get in will overtax the Cornish infrastructure, resulting in shortages of food, water and fuel, outbreak of epidemic diseases, pillaging, etc. [Editor's Note: I have been pre-booking accommodation in Britain during this period and can attest that any part of the island anywhere near Cornwall attracted a very high price premium for that week.]

Lunar eclipses. You get these when you get a solar eclipse and there are always several each year, but with interest in eclipses heightened even the accompanying lunar eclipses will attract some pseudoscientific meaning.

The Leonids on or about 17/11/1999, a whopping great meteor shower that occurs every 33 years. The extent of the foretaste of it in November 1998 was previously unknown, and that fact that it turned out to be a fizzer bears no relation to the expected size of the 1999 shower, which is confidently expected to rival that of 1966. Satellites and radio communications will be disrupted, probably not significantly - but these things were not of much importance in 1966, so there is plenty of scope for scaremongering.

Cute dates such as 9/9/99, 19/1/1999 (we missed it) and 19/9/1999 and 9/11/1999 - I am sure someone will find something significant in these. Look what happened on 8/8/88 ... numerologically "9" is connected with the gift of analysis - just as well, we could do with more of it in 1999.

A few mass cult suicides as the calendar lurches towards 2000. There is controversy over whether such practices are to be abhorred, or encouraged on the basis that they clean the gene pool.

By comparison the year 2000 appears to have very little to offer, although I am sure something will turn up.

1/1/2000: Hangover from millennium celebrations.

5 /5/2000: Planetary alignment. This is actually a very fuzzy phenomenon spread over many months either side of this date. Elementary calculations show that a 747 passing overhead will have more effect than all the planets combined, even on this day. There was a much more "significant" alignment in 1962, and we are still here.

31/12/2000: John Howard's (and Barry Williams') millennium party.



Arsenic and radiation

Colin Keay

Both arsenic and radiation can kill. But how much of either one is actually harmful, let alone lethal? Determination of lethal dose levels is not too difficult because death is such a clearly defined condition. On the other hand, finding a borderline between harmlessness and harm – health and sickness - is fraught with problems, not the least being the bias (either unconscious or not) of the investigator. Nowhere in toxicology, except perhaps over water fluoridation, has the intrusion of bias been more evident than in the case of nuclear radiation where some of the claims border on the absurd. We'll address that situation shortly.

Going back a bit, I was in my teens, developing an interest in all things scientific, when I learned of a major problem with sheep farming in some parts of New Zealand and how science came to the rescue. In the affected districts of that country, lambing percentages were way too low. Sheep were failing to carry their lambs to term. Careful analysis revealed that the soils in the affected areas were deficient in cobalt (or was it selenium? I'm not absolutely certain). Anyway, tiny amounts of the required trace element added to soil fertilisers or sheep licks fixed the problem.

As time went on I learned more about the vital importance of a host of trace elements in foetal development and for maintaining good health thereafter. The two I've already mentioned were cobalt, which is an essential element in the molecules of vitamin B₁₂, and selenium, which is essential for healthy heart muscle¹. There are many others that are equally vital. Here, from John Lenihan's illuminating book², is a table of trace elements required by humans and the date when their essential role was first recognised:

Since 1977 the table has been extended, but I do not have more up-to-date details except for the addition of boron¹. Even so, it is beginning to look as if nature has extensively called upon the diversity of chemical elements in the world to create the enzymes, hormones, proteins and other large molecules essential for life.

The alert reader will have noticed in the above table a considerable number of elements usually regarded as poisons. Selenium, for example, because of its role in heart muscle, is absolutely essen-

tial for human foetal development, but it is a serious poison in larger than trace amounts, mainly because of liver damage. And anyway who'd have thought, prior to 1975, that the poison favoured by elderly ladies would turn out to be another vital trace element? It is this kind of duality that has been found to apply just as well to nuclear radiation effects. Before pursuing that question further we should take a look at those chemical elements that have no known beneficial effects on the human beings, as has been falsely held to be the case with nuclear radiation.

That well-known thermometric substance, mercury, is a chemical element with no known beneficial effects for human growth or metabolism. In its metallic form it has the unfortunate property of being able to pass freely through the blood-brain barrier with deleterious effect on neural tissue. In its organic chemical form mercury is one of the most toxic agents known for humans and other vertebrates¹. In most of its forms the toxic effects of mercury extend down to very low levels of exposure and probably do so in a linear fashion. A very low threshold of toxicity, below which there is no harm to the organism, cannot be ruled out because of its long-term use in dental amalgams without apparent harm. Other elements that have toxic properties and are considered to be nonessential include lead, thallium, barium and gallium, and possibly aluminium. A more or less linear dose/toxicity relation may hold for these down to low levels of exposure.

Yet it is a basic toxicological tenet that all elements and compounds are toxic to some degree. Even such essentials of life like air and water are toxic in excessive amounts. So we need to develop an understanding of

the relationship between dose and effect which embraces all possibilities. It appears to me that there are only three distinct forms that the dose/effect relation may take. I will label them DE1, DE2 and DE3 as follows:

- DE1 Harmful at any level of exposure. No known threshold;

- DE2 Not essential for life, but harmful

above a certain threshold level;

- DE3 Harmful at levels too low as well as too great.

Iron	17 th century	Iodine	19 th century
Copper	1928	Manganese	1931
Zinc	1934	Cobalt	1935
Molybdenum	1953	Selenium	1957
Chromium	1959	Tin	1970
Vanadium	1971	Fluorine	1971
Silicon	1972	Nickel	1974
Arsenic	1975	Cadmium	1977

Table 1

The first type of relation between dose and effect, DE1, is generally taken to be linear and perhaps may be exemplified by lead. Even small exposures to lead by children affect the nervous system and impair learning. A simple graph visually expresses this relationship. It is depicted in Figure 1, which some would argue is upside down compared with more usual presentations. I have chosen this approach because I consider harm to be a negative effect. At the zero point, 0, there is no dose, that is to say no exposure, and hence no harm. As the dose is increased so is the harm done until eventually death results. Of course the dose has to be normalised to the size of the organism by usually expressing it in terms of milligrams per kilogram of body weight, or in the case of surface absorption (eg, skin or lung area) milligrams per square metre, or some similar unit.

We need now to consider varying tolerances. It takes less to kill some people, such as the aged and infirm or fast-growing foetuses and infants, than more robust individuals. Toxicologists take such variability into account through their LD₅₀ parameter, which they call potency³. As exposure to the toxin (or poison) mounts within a given population (cohort) there are a few weak individuals who will succumb first, then more and more die until finally the dose becomes so great that the most hardy are killed. The exposure at which fifty percent of the cohort has already succumbed is referred to as the median Lethal Dose, LD₅₀. In our graph this terminal stage is therefore depicted by a boxed area rather than a sharp cut-off line.

For many years scientists thought that nuclear radiation (then mainly from radioactive substances in those pre-nuclear-bomb days) obeyed a linear dose/effect (DE1) relationship. Those of an antinuclear persuasion continue to believe it does. Some go so far as to believe that low levels of nuclear radiation are relatively more harmful per unit than high doses. There is no reliable evidence I know of to support this stance, and as we shall see, plenty of evidence to the contrary.

Because they took their responsibilities very seriously, radiation protection authorities in the past adopted a highly conservative approach and overestimated the risks. To do so they supported the linear (DE1) hypothesis on the grounds that critical cell damage may result from as little as a single nuclear particle and the total amount of damage to a person is directly proportional to the level of radiation exposure. From the standpoint of framing safety regulations this was wise, but it has played into the hands of antinuclear propagandists.

Over the years evidence of a threshold effect (DE2) has gradually accumulated. With the exception of some

experiments on microorganisms (which we will mention later) it has proved impossible to detect, let alone measure, deleterious effects of low radiation doses in humans. The few claims to the contrary have been swamped by evidence that ambient levels of nuclear radiation are not harmful. Otherwise citizens of Kerala in India, much of Iran and Norway would be less healthy than other circumstances (such as poverty) would indicate. Nor should Australians be immune if the linear (DE1) hypothesis is correct for nuclear radiation. For an adult the average radiation dose in Australia is approximately 2.3 millisieverts (2,300 microsieverts) per year which is close to the global mean. In Australia it varies from place to place and with lifestyle from a little under 2 to maybe as much as 5 millisieverts (mSv) or more per year. Five mSv is just under one thousandth of the well-established LD₅₀ radiation dose of 6 sieverts resulting in death for half of those so exposed in a single incident. Australians have never been healthier; thus the average of 2.3 mSv per year is evidently not doing us much harm.

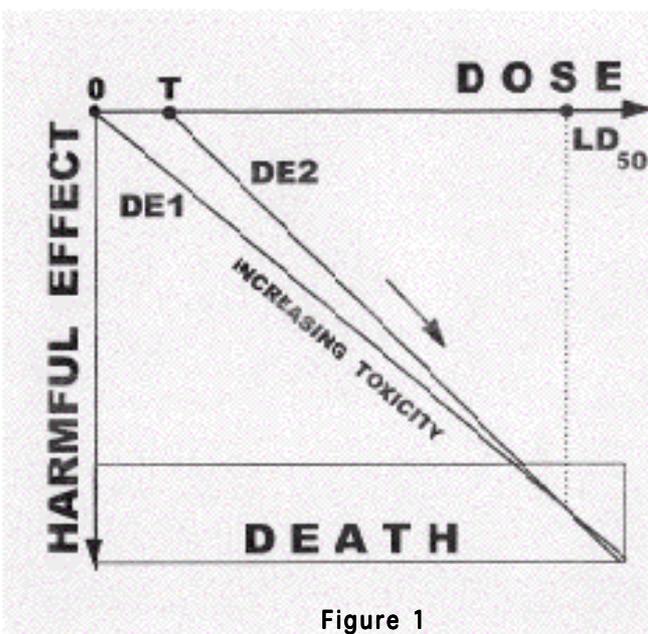


Figure 1

Very persuasive evidence from chronically high nuclear radiation exposures emerged through studies of wartime workers engaged half a century ago in painting luminous watch and instrument dials with radioactive compounds. Some workers unwittingly gave themselves massive doses of radioactivity by licking the tips of their camelhair brushes, sharpening them to produce finer figures. No radiation-induced cancers were detected in those receiving accumulated doses of radioactivity less than 220 mSv, about one thirtieth of a fatal dose. This finding has been

strongly supported by rigorous studies of weapons facility workers exposed to substantial amounts of radioactive material, principally plutonium dust. They have proved to be healthier than the average population, with fewer mortalities from lung and bone cancers⁴.

And we must not overlook the undeniable fact that a human body is itself radioactive. There are about one million nuclear disintegrations occurring naturally in you and me every three minutes. These are for the most part due to the radioactive decay of potassium-40, the radioactive isotope of potassium. It is an element of major importance to the electrolyte balance of body cells, nerve cells in particular. We survive because, like all creatures, we have evolved efficient mechanisms to repair damaged cells and correct DNA errors in order to minimise lasting effects. Otherwise the normal 70 million natural, spontaneous DNA lesions per cell per year⁵ from all causes would quickly lead to the extinction of our species.

In view of the body's damage control abilities it is

hardly surprising that there should be a damage threshold in the presence of harmful ionising events popping off all the time. The curve marked DE2 in Figure 1 shows a threshold for harm at the point labelled T. It applies to the majority of toxins for which there is no health benefit at any dose level. The threshold dose varies in a similar way to the LD₅₀ dose, covering a range that is dependent on the health and resilience of the individual. Moreover, the position of T along the dose axis varies greatly from toxin to toxin. For nuclear radiations, data from the survivors of the Hiroshima and Nagasaki bombings show clearly that there was no increase in the normal number of total cancer deaths over nearly half a century⁶. As for Chernobyl, a decade of health assessments showed that the only major effects that could be clearly identified were those due to the anxieties of the general population⁷. It seems that if a person survives a sub-lethal radiation dose for more than a few months their life expectancy is hardly affected. Indeed, in some cases it may be increased (because of a stimulated immune system)!

This leads us to consider the beneficial aspects of nuclear radiation exposure. But first let us return to the earlier matter of essential trace elements, which is a parallel situation. The average cell of the human body contains 50 trillion atoms, all of which are components of molecules vital for the correct functioning of the cell. Looking at some of the trace elements we see that an average cell requires over a million selenium atoms, heart muscle cells contain many more than that and brain cells much fewer. And the average cell contains four million atoms of cadmium, another deadly poison in large doses. Similar figures emerge for most other trace elements essential for life.

Thus when we do a dose/effect plot for these elements we obtain a curve like that shown in Figure 2. In the toxicology jargon it is known as a biphasic dose-response curve, although I have plotted it upside down and included a region on the other side of the dose axis to denote a healthy response. Briefly, below dose-level A there is a deficiency situation where death may result (spontaneous abortion, beriberi, etc.) if the dose is seriously insufficient. Between A and B life and health prevail. When the level at B is reached the body tries to eliminate any excess, which it can do for some toxins more readily than for others (such as lead). If the intake exceeds the rate of elimination toxic poisoning occurs, sickness results and death may ensue, as shown at the bottom right of Figure 2. The points A and B are not precisely fixed, varying according to similar factors that make LD₅₀ the middle of a range of values.

In the case of nuclear (alpha, beta, gamma and neutron) radiations it is now virtually certain that Figure 2 applies. The first three of such radiations do have health giving effects at appropriate levels (this is less certain for neutron radiation). Of course those who travel to spas like Hepburn Springs, taking the waters and swimming in them, have known this all along! It is interesting that it took quite some time to prove spa lovers correct. But as with any entrenched dogma the linear dose hypothesis, radiation-is-harmful-at-any-level, continues to hold sway in many quarters.

Over the years strong evidence indicating real health benefits (known as radiation hormesis) steadily built up to the point where, in 1980, a book was published devoted entirely to the subject⁸. The dose-span A-B in Figure 2 evidently includes naturally present radiation levels as well as considerable excesses up to possibly as much as the 200-mSv level mentioned earlier. At the peak P the health benefits (hormesis) are at their maximum. The proven benefits of radiation hormesis in mammals include enhanced defence reactions against neoplastic and infectious diseases, stimulation of DNA

repair, increased longevity and improved fertility⁵. This means that the radiation protection standards based on the linear-dose hypothesis are overly conservative. So much so that two leading British radiation biophysicists have recently published a book advocating a radical reappraisal of the entire subject⁹. Unfortunately this reassessment gives no comfort to those servicemen claiming compensation for exposure to the Maralinga nuclear tests.

Is radiation hormesis so surprising? Not when you consider that life on this planet evolved under conditions of higher environmental radioactiv-

ity than at the present time, Chernobyl and military bomb-test fallout notwithstanding. Organisms of all kinds have had to overcome the damaging effects of radiation. Some, like cockroaches and certain bacteria, have developed a massive immunity to radiation. The fact that they have done so proves that defence is possible, and if humans have not reached the immunity levels of cockroaches it can only be due to us not having had the need to. But of course we shouldn't push it! Just stop getting hysterical.

At this stage I should emphasise that the evidence for radiation hormesis comes in the main from health studies of sufficiently large cohorts where the sample size lends significance to the statistics. This simply means that the health benefits of a moderate excess of radiation exceed any deleterious effects it may have in the dose range where hormesis prevails. So the discov-

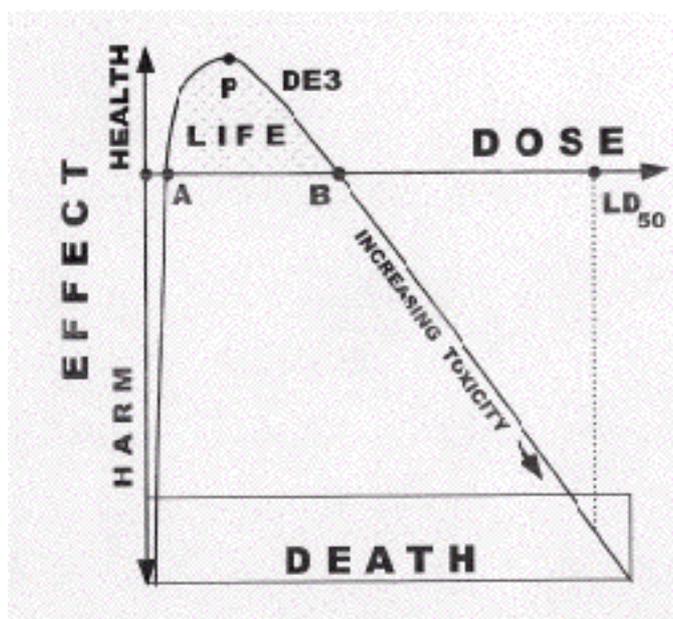


Figure 2

ery of this or that mechanism for radiation damage to living cells may be of value for understanding them, but does not invalidate the hormesis evidence. An example of this came from a colleague who drew to my attention a very recent paper¹⁰ about a new study which found that ionising radiations can cause genetic mutations that might lead to cancer even if the radiation does not damage the cell nucleus. This is of interest to cytologists, but if the effect proved at all significant radiation hormesis would not be observed.

The existence of radiation hormesis raises an intriguing question. Is there such a syndrome as radiation deficiency? The first hint that this might occur was published as early as 1898 by G F Atkinson¹¹ who discovered increased growth in blue-green algae exposed to x-rays. It is not so easy to reduce radiation exposure below ambient levels. However French scientists have done so, demonstrating that colonies of bacteria and protozoa exposed to greatly reduced levels of natural radiation exhibit deficiency symptoms resulting in dramatically decreased proliferation compared with control colonies⁵.

In the light of these findings it is clear that nuclear radiation has similar biological properties to many of the other elements and chemical compounds essential to life on this planet. In particular we should abandon our fears of low-level nuclear radiation. It is all around us. We are living in a dilute ocean of radioactivity, cosmic ray bombardment and the emissions originating within our own bodies from which we cannot escape. We should worry only if we are exposed to levels more than one hundred times our normal exposure and not whenever minor increases occur. This has current relevance to the proposed replacement of the Lucas Heights reactor, where for blatantly political reasons activists are stirring up completely unjustifiable fears among the residents of adjacent suburbs.

As a further observation on the topic of radiation, consider exposure to sunlight. It has been around for a long time. And there are indications that our physiological response to it is similar to that towards nuclear radiation as well as the toxic chemical exposures of essential trace elements discussed above. It is known that a certain amount of sunlight is necessary for good health through the photochemical production of vitamin-D by the outer layers of the skin¹². Workers whose occupation denies them solar exposure need dietary vitamin-D for good health. Without it they suffer deficiency diseases such as rickets. So much for underexposure to sunlight. Over exposure leads to sunburn in members of those races lacking the protective dark skin evolved by others over countless millennia of exposure. And for those with light skins frequent sunburn bestows a legacy of skin-cancer in later years. It is rare for sunburn itself to lead to death, but skin-cancers are a major factor in the mortality statistics of inhabitants of the sunny land of Oz. One can see from this that the form of the biphasic dose-response curve of Figure 2 is also applicable to sun-exposure. The biphasic pattern appears to be a paradigm for the abilities organisms evolve to capitalise on their environmental conditions whilst controlling or ameliorating the dangers they may present.

I cannot resist one more example of a ubiquitous biphasic response. Our servant, electricity, which makes

life so comfortable for us, follows a DE3 form of response. If there is an electrical deficiency in your body your heart stops and you are dead. Within certain bounds the electrical activity of your nervous system maintains good health, with heart and brain functioning happily. But as we all know, too much electricity can kill. Grabbing hold of a high-tension power line may be very toxic!

To conclude, nuclear radiation phobias are no more warranted than aversions to any of the other potentially toxic agents we encounter every day in harmless amounts. As with so many other issues it is wise to apply some good healthy scepticism to counter the alarmist pronouncements of the voluble scaremongers in our society.

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... Prophets of doom from p 12

has ever predicted real events in advance with any degree of specificity, and to deplore the trend that leads so many people to seek to profit from playing on other people's insecurities.

The people who called us have been the ones with sufficient innate scepticism to call the Skeptics, and we can only hope we have managed to encourage them to look at all this rubbish from a rational perspective, and to stop worrying needlessly.

But how many other people, whose minds have been seduced into unreason as a result of irresponsible fear-mongering by sections of the media, apocalyptic religious cults or new age fatuities, are now living in terror of Earth-shattering events? How many people are contemplating ending their lives because they believe that devastation is about to strike the world? How many more potential Heaven's Gates are in the community, ticking away because an historical accident of timing has given one of our useful measuring tools a noticeable, but otherwise irrelevant set of digits?

And will any of the above groups cry *mea culpa*, if their irresponsible actions do lead to someone's death? Don't hold your breath.



Getting rich quick!

Bob Nixon

Amway? Junk bonds? A better mousetrap? Nothing so trivial. Here's your chance to make a quick buck the easy way. From Mindreaders, of Marlboro New Jersey comes *New Age Entrepreneur*, a catalogue of products designed to boost your profits and impress your clients.

Mindreaders offer "Surefire money making opportunities", although they don't come with solid guarantees. Hell, they don't need guarantees, just read what some of their customers have said:

Your chart service, manuals and tapes have helped me make more money than I thought possible. I wish I'd known about your catalogue when I first started out. You would have saved me years of wasted time and money. Thank You!!!

Ali Heller, Hypnotist & Psychic from Somerset N J.

Most of the New Age business people I know are wonderfully talented, but when it comes to making a living from their talents, they don't have a clue. Now, Thanks to your top of the line moneymakers, we all do. But please do me a big favor, don't send your catalog to my competition...!

Janet Brennan, Handwriting analyst, Author & Clairvoyant from Brooklyn, NY

Thanks to your products I've made more money in the past two months I've made in the past two years. I'm a customer for life. And quite possibly, my next life."

Ted Saint James, Psychic Entertainer from Ocean, NJ.

What more do you need? These are satisfied customers. Just look at the exclamation marks offered without solicitation by young Ali, three, count them THREE!!! (A picture of Ali accompanying the Hypnotist/Psychic's testimonial makes me think it must be very difficult for her to convince male clients to watch the swinging watch - but I digress.)

So what is available from this marketing giant? Well, for an investment (their word) of just \$US49.95, you can have *The Private Readers Secret Guide to Giving Incredibly Accurate & Profitable Readings* (Previously published as *The Tarot Reader's Notebook*). This, as many readers will know, is "THE classic guide on how to give readings so amazingly accurate that your clients may be tempted to start a religion around you". What a book!!! For the price of a halfway decent meal you can learn such secrets as:

- How to read your client like an open book
- How knowing the exact moment to collect your payment can make your reading twice as effective.
- How to secretly hypnotise your client into believing their reading was more accurate.
- How to get your client to agree with your reading statements.
- Using story-telling techniques that will give you the reputation of a super psychic.

And my personal favourite:

- How to gain valuable inside information from the

client simply by having them sit in a certain type of chair.

But, I hear you ask, what about my plan to write my own book and make a dollar that way. Stop and think, dopey!!! Mindreaders offers the short-cut method of becoming a published author. Yes, for as little as 89 cents a copy (for bulk orders), you can have your name appear on books ranging in subject from *How to get the winning edge with women* to *How to heal yourself with gemstones*. You can even have your photograph appear on the back cover. Great moneymakers and, because you don't have to write anything more difficult than a cheque made out to Mindreaders, time-savers.

Not a catalogue, but as Mindreaders President Marc Sky calls it, a *Resource Guide*. Marc also offers a finder's fee for any customer who can direct a client to his Psychic Detective service. It's bloody simple. As Marc says:

There will be times when your customers come to you for readings and request information that you simply do not know. It happens to all readers at times.

Questions such as where is a missing child, missing debtors, lost loved ones, missing heirs, unclaimed property, runaways and more. Now you can turn those painful moments into easy money.

Now Marc is quite open about the fact that this service isn't cheap. "It averages between \$250 to \$5,000." (If that's the 'average', I suspect Marc needs a lesson in basic maths, but perhaps I'm being picky). The point is, put your troubled client onto Marc and you get ten percent of the take.

But there's more!!!

- For a mere \$US295.00 and the time to record a 40 second message, you can have your own #900 phone line, and "sit back and cash the cheques".
- \$22.50 will get you the good news on writing and distributing press releases that will get your head in the papers.
- Just \$6.00 and you get a beginner's guide to the mail order business.

Right, now listen up, you Skeptics. I'm sick of it, all the arguing with the people I thought were misguided, the astrologers, the crystal healers, all the New Agers. I've assumed they were mistaken, that they were the ones with faulty mental tool-kits. Enough!!!

It's the New Agers who are making the big bucks, and it's all so damn easy. I have now created my own religion, and am negotiating rental of suitable office space. My accountant tells me that I can have my clinic up and running in just weeks.

That just gives me time for the surgery necessary to remove my conscience.

Watch future issues of this magazine for details of my new range of self-help books, audio cassettes and personal appearances.

So Long, suckers!!!



There's no fuel like an old fuel

Geoffrey Chia

The United States with 5% of the World's population guzzles up 35% of the World's petroleum and is responsible for 23% of carbon emissions. What's to become of the World, with developing nations aspiring to the same level of consumption as the US? Here's my suggestion: invest in scum. Read on and all will be revealed.

What is the single most important commodity which enables us to enjoy our high standard of living?

Which enables far more mouths to be fed than ever before in human history?

Which enables materials to be mined, manufactured, processed, packaged and transported with unprecedented ease?

Which enables our activities to extend around the clock, oblivious of the darkness of the night, and our activities to extend around the world, oblivious of climatic extremes?

Which enables travel at high speeds and over long distances unimaginable to our forebears? Which drives telecommunications and the media?

It is energy. Energy is the *sine qua non* of modern industrial society.

Hitler understood that the indispensable accompaniment to the military industrial complex to prosecute an effective war was oil - easily available and lots of it. His appreciation of this was evidenced by the success of the initial blitzkrieg when armoured units were able to secure large tracts of land at a rate that would have been previously unthinkable. The beginning of the end for the Third Reich could well have been when this focus was lost, when instead of total concentration on the capture of the Russian oilfields in Baku, some German forces pursued the emotive goal of conquering the city which bore Stalin's name in the bitterly cold winter of 1942/43. We all know the outcome of that campaign.

Mass production and petroleum combined to create the automobile culture, which allowed the establishment of outer city residential suburbs and therefore the creation of that newest temple of human worship - the suburban shopping mall.

The politically manufactured oil shortages of the past (1973 in particular) brought home to everyone how much we depend on energy to enjoy the lifestyles we do. Hence alternative energy programmes started sprouting up all over the place, but none so far has even remotely promised to displace the vital role that petroleum and its products play in contemporary civilisation.

There are five main sources from which we may derive energy:

1. Solar energy and its chemical/mechanical products:

a: Fossil fuels - fancy name for the rotted corpses of long dead plants and animals (ultimately all this chemical energy came from photosynthesis)

b: Other plant and animal products eg firewood, cow dung (still very popular in India), ethanol etc. - also ultimately derived from photosynthesis.

c: Hydroelectric power - ultimately derived from the sun, as it is solar energy which evaporates the oceans and drives the winds which push the clouds over land where they unload their moisture.

d: Wind power - convection currents in our atmosphere are, of course, due to the effects of the sun.

e: Direct use of solar power: photoelectric power, solar heating

2. Gravitational energy

Tidal power

3. Nuclear fission

Nuclear reactors are the obvious example but geothermal energy should also be included here as the heat of the Earth's core comes from radioactive decay of heavy elements.

4. Nuclear fusion

The promised holy grail of physicists which has yet to show any real results despite the cold fusion fiasco not so long ago.

5. Small chemical/electrical power sources

Electric batteries, fuel cells (a minuscule source when compared to the major power sources).

The drawbacks of the fossil fuels are well known: carbon emissions, the greenhouse effect & possible global warming, pollution by impurities or additives (sulphur dioxide, lead compounds), acid rain and especially the fact that they are a non renewable resource.

Nuclear fission looked very promising at one stage (before Three Mile Island and Chernobyl) and still provides a large proportion of energy for some countries such as France. In the short term, it appeared to be non polluting. Unfortunately, for various reasons both technical and political, nuclear power generation poses far greater problems and expense that was hitherto thought likely. Radioactive plutonium is one of the most toxic substances known. The effects of radioactive caesium and iodine entering the food chain are well known. Clearly, any option which allows a State with few alternative sources (such as hydroelectricity) to be less dependent on oil and which has a "petroleum sparing" effect will continue to remain attractive. This despite the thorny unresolved issues of disposal of nuclear waste, decommissioning of old nuclear plants (which may end up being encased in concrete and cordoned

off for decades at horrendous expense) and potential acquisition of materials by terrorists for bomb building (especially with regard to the breeder reactors).

More "natural" sources of energy such as wind, geothermal, hydroelectric or tidal energy seem to be applicable only in a limited fashion to particular fortunate geographic locations and are unlikely to be major sources globally.

As mentioned above, by far the most important source of energy worldwide is petroleum, and there are good reasons for this. Apart from the economic reasons, oil based fuels are a near ideal chemical energy source due to the following:

Energy density:

Biologically, fats and oils are the most concentrated sources of energy per unit weight or volume. For instance, the calorific value of fats and oils is 9kcal/g as compared with 4kcal/g for either carbohydrates or proteins and 7kcal/g for ethanol. These same relative values hold true if they are burnt chemically as fuel.

Liquid medium:

Gaseous fuels eg CNG or methane have low energy densities (volume wise) and are difficult to transport and contain, requiring pressurised containers. Solid fuels cannot be readily and easily atomised to produce an air fuel mixture to power internal combustion or jet engines. Liquid fuels overcome both obstacles, with the added advantage that they can take on the shape of any container (unlike solid fuels) eg, the wing tanks of aircraft, resulting in space optimisation. The ideal liquid fuels will remain liquids at extremes of temperature, even the sub zero Antarctic.

Transportability and storage:

For electricity to be delivered, power lines, pylons and cables need to be set up and transformers built. The electricity will be available only at fixed outlets and needs to be consumed directly. Petroleum products can be transported to any site unrestricted by defined lanes of delivery and can be stored for future utilisation at any date.

Aviation:

There is no energy source at present which is superior to or can effectively substitute for petroleum products for aviation. Nuclear, hydroelectric, wind and geothermal power may generate electricity, but how may this electricity be stored on an aircraft and produce power to match that of a jet engine? Without petroleum, the entire air transport industry would grind to a halt. One could conceive of alcohol or LPG powered planes, but again, due to lower energy density of these fuels or bulky storage containers, the performance and range of such aircraft would be inferior.

Estimates vary, but petroleum is likely to remain plentiful and cheap only for the next thirty to fifty years or so.

What measures to take now?

Conservation will go a long way to delay the inevitable oil shortages. Cogeneration, better building construction (insulation, reflective glass etc), more efficient

engines, hybrid engines, use of alternative energy sources to "spare" petroleum and so forth will help. And when the present oil fields run dry there are other means of obtaining oil: from oil shale, or by injecting detergents into previously tapped oil wells, or by synthesizing oil from coal or natural gas. These methods exist now but are little utilised being generally not cost competitive with good old crude.

The above are all just temporizing measures however. After that, notwithstanding any breakthrough, air travel will all but disappear. Some might say the return to an agrarian lifestyle would be the way to go. This is unlikely to be acceptable for the majority of people used to a high standard of living. Furthermore, in a world of 6 billion people, it may not be possible to revert to low productivity agricultural economies without mass starvation.

But here is the other problem: in doing our utmost to extricate every last bit of energy from all the corpses of organisms accumulated underground over the past billion years, we will also ensure that every last bit of the carbon locked up in these fossils will have been released into the atmosphere in contemporary times. Probably not a good thing.

One could argue that concerns about carbon emissions have been oversold for the following reasons:

1. Excessive atmospheric CO₂ rapidly dissolves in the worlds oceans which serve as a homeostatic buffer
2. Geologists and palaeontologists tell us that the level of atmospheric CO₂ used to be far higher in the past as compared to the present (mainly due to volcanic activity) and life has continued on. Human activities may pale in comparison to these prehistoric CO₂ emissions from volcanoes.
3. There is no hard evidence for global warming at this time, as all human records represent only a snapshot in geological time and do not necessarily represent a trend.

All valid points. The thing is, there is a good chance we could be doing harm from our present activities (the International Panel on Climate Change thinks so). Do we take that chance and do we continue to barge along with blinkers on? Or do we attempt to minimise our impact on the environment now?

Kurt Vonnegut suggested a fitting epitaph for Planet Earth. He said that we ought to leave a message carved in huge letters on the side of the Grand Canyon should aliens happen to visit this planet in the future and find it a seething slag heap of toxic waste. This is what we should write to our future visitors (I paraphrase):

We could have saved the world, but we were too darn lazy and added below:

And also too darn cheap.

Let me now outline the future energy scenario that many Physicists would have us believe in - it is a big money scheme, and we're talking gigabucks:

A few (?five ?ten ?fifty) years from now there is a major breakthrough in fusion research (which has already cost billions) and electricity becomes laughably

plentiful, cheap and inexhaustible. So powering our cities and many industries is no longer a problem and it is all pollution free. What of transportation? Over land, the electric vehicle will come into its own, whether by road or rail. Sea transport is a little trickier as it is unlikely that fusion generators (Tokomaks) may be reduced to a size that even a supertanker could contain in the near future, and even if they could, this may not be cost effective. Independent fusion units would certainly be out of the question for small craft. The need for a new aviation fuel would still exist and would not be solved by abundant electricity.

Is hydrogen the answer?

The answer to these issues, we are told, is hydrogen, derived from the electrolysis of water. And hydrogen is so wonderful because when you burn it (or utilise it in a fuel cell), all you get is nothing more than water again - no pollution. Thus we will have hydrogen powered ships and jet aircraft. Only problem is, this will entail the complete redesign of current fuel storage, transportation and distribution facilities around the world, not to mention new engines and tanks on all these craft. Could liquid hydrogen be transported across thousands of miles by pipeline as oil is currently being done? Liquid hydrogen would be immensely more difficult to store and handle than current petroleum based fuels. Bulky pressurised and heavily insulated hermetic tanks would be necessary. Precautions must be taken in handling this intensely cold commodity, cryogenic technology must be introduced. Another major problem would be inevitable "boil off" of the liquid hydrogen if stored for too long which would represent a large waste and be dangerous if it occurred in an enclosed environment. The potential for accidents would be ever present, hydrogen being more volatile than many petroleum products (for instance, throw a burning match into a pool of cold kerosene or diesel and what do you get? An extinguished match.) The image of the burning Hindenburg may not be a fair one to conjure up but it is an inevitable one.

What if I were in the middle of a desert at night, or in a sailboat in the middle of the sea at night, and needed an energy source to run my generator or tractor or boat engine? Diesel or petrol are very convenient for this and it is difficult to conceive how hydrogen could supplant these fuels in these small scale geographically isolated situations. Direct solar or wind generated electricity could not provide sufficient power for many tasks.

Enter biomass

There is a more practical (in my opinion) future energy scenario based on chemical energy sources and technology that already exists. What if I were to say that

there exist today sources of chemical energy which are sustainable and renewable and do not contribute to a net gain of carbon dioxide in the atmosphere? Well there are, and collectively we term this "biomass energy" - these are all the sources mentioned in paragraph 1 (b) previously.

What do I mean "do not contribute to a net gain of carbon dioxide in the atmosphere"? Surely when one burns a piece of wood, carbon dioxide is released? The answer is simple: so long as a new tree is planted for every equivalent mass of wood burnt, there is no net increase in atmospheric carbon dioxide, as the growing tree will lock atmospheric carbon into its mass again. This is the attraction of all biomass energy provided we replenish everything we burn. In fact, it may not be a bad thing to bury dead trees or used tree products (paper, disposable chopsticks etc) right now, almost as a payback to the earth for past carbon compounds we have taken from it and released into the air.

Is biomass energy just a fancy term for cow dung and wood and such, which have been with us throughout human history? If so, what is the big deal?

New approaches to biomass energy have been introduced this century. Small scale methane-from-sewage projects are widespread throughout China and India. One of the most ambitious schemes was the Brazilian National Alcohol Programme where sugar cane has been used to produce ethanol which, alone or mixed with gasoline has gone a long way to reduce their dependency on petroleum. Another attractive idea was

that of pyrolysis - extracting hydrocarbons in a form usable as fuel from wood chips or any other plant waste, by subjecting them to high temperatures. Unfortunately, one guru calculated that if a local council were to collect all the lawn clippings, sawn tree branches, newspapers etc from the neighbourhood and subject them to pyrolysis, the net gain in fuel would be less than the fuel expended in collecting and processing them.

I believe modern methods could allow biomass energy to substitute for petroleum based fuels, including aviation fuels. This has already been done in

a limited manner. Towards the end of WW II when the Japanese had run out of oil, they used pine resin to power some Zero fighters. It worked to a degree although the engines did tend to gum up. Few would be surprised with the suggestion that good old turpentine could be used as a fuel. Diesel engines have been run on vegetable oils (pure or mixed with other fuels) in many countries experimentally eg, tractors run on sunflower oil in South Africa. Again, during WW II the Chinese developed an industrial process for cracking vegetable oils and turning them into motor fuels which did not clog engines.

... there exist today sources of chemical energy which are sustainable and renewable and do not contribute to a net gain of carbon dioxide.

The ideal fuel

Let us now summarise the characteristics of the ideal fuel. It should have all the advantages petroleum based oils now have ie, have a high energy density, be a liquid over a wide range of temperatures and it (or its derivatives) could be used as aviation fuel. It should have none of the disadvantages of fossil fuels ie, it should be renewable, not add to the net CO2 load on the atmosphere and be minimally polluting. It should have a minimal environmental impact in the event of a spill or leak and be biodegradable. It should have none of the disadvantages of liquid hydrogen, which it would not, if it had the physical characteristics of petroleum based oils. Additionally, it should be nontoxic. Some hydrocarbon based fuels are quite poisonous eg, methanol can induce metabolic acidosis and blindness and benzene is carcinogenic.

Now we come to the speculative, perhaps controversial part. I believe it is possible for us to create the ideal (or near ideal) fuel with existing technology.

Just about all the chemical energy we use is ultimately derived, directly or indirectly, from the photosynthetic process, and this is where I believe our efforts should be concentrated.

All the above lead me to conclude that it would have to be a plant derived oil. The biggest obstacle to its development and widespread use would be economics. It would need to be price competitive with petroleum based oils and be able to meet current and future demands ie, would have to be produced cheaply on a large scale.

The question is, what is the most direct and cost effective way of converting sunlight into liquid hydrocarbons (preferably oil, although alcohol is also useful) rapidly and in volume?

Growing sugar cane then converting it to alcohol (which has a lower energy density than oil) is a two stage process. Furthermore there is opportunity cost in that the cane fields could be used for growing other crops, and sugar itself is a worthwhile commodity whose value may exceed that of the alcohol produced, depending on market circumstances. Similar issues hold for the vegetable oils, in that there is opportunity cost in the land utilisation and the oils themselves are useful commodities in non-fuel applications. The same applies to pine oils. Additionally, much of the solar energy, water and nutrients consumed during the growth of these crops goes into the formation of roots, stems or other plant parts which we would not primarily be interested in. This brings us to the characteristics of the ideal fuel crop.

The ideal fuel crop would:

1. Grow rapidly (warm temperatures would probably be required) and be harvested easily
2. Utilise land (or even sea) areas not otherwise useful for other purposes
3. Convert efficiently sunlight, water, CO2 and nutrients to the end product ie, oil, with minimal diversion of energy into the formation of other plant parts. In the extreme situation, such a plant would consist of little more than chloroplasts and oil pro-

ducing organelles surrounded by a cell membrane - namely, an algal species.

4. If fresh water is in short supply, be able to use sea or brackish water

5. Should it inadvertently escape the confines of the "fuel farms" it should not proliferate rampantly and pose an ecological hazard. Perhaps a self destruct sequence could be built into its genes or it could be engineered to require an essential nutrient not normally found in the greater environment.

One inescapable criterion, however, will be that such a crop will require lots of sunshine. Perhaps areas like outback Australia or Arizona could prove to be just the place for such "fuel farms".

Of course, such a plant does not exist. Not now, at any rate. This is where innovation and investment must step in. Creation of such a plant will involve biotechnology, the controversies surrounding which need to be discussed separately. Given the current state of biotechnology, it is not a great leap of faith to imagine introducing an oil producing gene into a rapidly growing algal species to produce such a plant. Some algae eg. *Botryococcus braunii* already have a lipid component of up to 20% and some microalgae have a doubling time of less than a day.

This brings us to my initial assertion: that we should invest in scum.

Other possibilities include bioengineering seaweed or kelp for the same purpose. In all probability there will be no single ideal fuel crop but several different sorts, depending on the local environments where they will be grown, and producing different sorts of oils for different uses.

Some preliminary research has already been done on the above, dating back several decades. However, no breakthrough has occurred, largely, I believe, due to lack of funds and lack of interest especially because of current cheap petroleum prices. Barring another petroleum crisis, there will be no major Government sponsorship for such a project.

Biotechnology may also be the key to the production of new renewable polymers and plastics, which, after all, are presently derived from petroleum. But that is a whole other story.



**Spread the word.
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friends to subscribe
to *the Skeptic*.**

Am I being paranoid enough?

Bob Nixon

In my travels through the world of alternative magazines I am often baffled, sometimes numbed. More than once I have found the "skeptic grin" taking control of my face. *Lock Stock & Barrel* had a very different effect. There are people out there who buy this stuff, and pity help us, some of them probably follow the line it pushes. New World Order, the Biblical justification for killing, mind altering drugs that turn normal people into crazed killers, the best way to bury your rifle, the transportation of materials for the construction of the atomic bomb from the US to Russia, the destruction of the Inca empire and it's lesson for today (be strong and they can't kick your butt, basically).

Sometimes I can't bring myself to read a whole edition of some magazines. I once read a copy of *Nexus* from cover to cover and lost all feeling in the right side of my body for a week. *LS&B* I couldn't put down. Every turn of the page was an adventure, from the front cover depicting Adolf Hitler, John Laws and John Howard with the caption "Tyrants comparing notes" to the classified ads at the back "Tank periscopes - as new - Ideal for your bunker". Bunkers? Who the hell are these people?

Well, they appear to be, mainly, a Mr Ron Owen, a gun dealer (Owen Guns, get it?) and president of the Firearms Owners Association Australia. Although the editor's name is listed as Jimi Hendrix, Ron seems to write most of the articles, including one little gem called "Know Your Rights". Now look, what follows is a quote. I don't want you to get the feeling this is me talking, right, got that?

The best advice without doubt, when realising that police or members of the many security forces are in the vicinity of your home, is to immediately locate your pocket tape recorder, start it up and keep it on your person. Find a camera, and start taking photographs of the government intruders and their means of transport. If you have a video camera, use that as the number one preference. Get other family members to make phone calls to your friends and neighbours and tell them to get over to your place with their cameras and recorders. If the phones have been cut off, use any other means of communication.

Is it just me, or does anyone else have an image of two startled police constables in the harsh glare of arc lights while they try to grab a quick burger? Mr Owen then gives us a bit about don't let them anywhere near your house unless they have a warrant. Quoting again now:

If the police ask you or your partner to go somewhere else and answer questions in private, refuse, stay and watch. Remember you are dealing with a known criminal organisation which has another known criminal organisation called the CJC watching them!

Perhaps it's just a typographical error of some sort. Perhaps he means "known criminal *investigation* organisation". The CJC, I assume is Queensland's Criminal

Justice Commission (*LS&B* is published in that state), and I confess I don't know a lot about it. Police, though seems a clear enough term. Back to Mr Owen:

Think of where you are going to draw the line before beginning violence against them, but do not show it in any way or discuss it. It is definitely not an option when the ball is in their court. Randy Weaver fought them off when he got his house call, but lost his wife, his baby, his son and his best friend. Okay he got \$3 million compensation, but shoot outs on home turf are not good logic in my book.

Sound advice here, I think. Don't start shooting at police. Yeah, good advice. Randy Weaver, by the way, was an unfortunate *American* gentleman whom police wanted to talk to about a range of issues. I don't think including him as an example is particularly helpful here. Ron follows on with a number of court rulings from a variety of countries that support the right to privacy and restrict anyone attempting to enter your property.

In my experience, the best way to judge the aims of a magazine is to examine the advertising it carries. *LS&B* offers a wide range of gear for the discerning warrior from its own warehouse. For just \$10 you can purchase such learned tracts as *Selected booby traps* or *Shaped charges*. For those with a need for a personal weapon, why not select from a range of do-it-yourself handbooks, *Home Workshop .22 machine pistol* or *M1;M16;AR15 conversions*. From paid advertisers you might like to pick up a chemical warfare suit offering "Complete Family Protection against Chemical Agents", or if you don't fancy the full suit "as seen in the movie *Outbreak*", why not opt for just the gas mask, they come with spare filters. How are you fixed for body armour - kevlar, no rubbish - helmets and vests available. Don't want to be seen? Well, you could go with simple camouflage gear, or you could spend the \$200 and sit behind an anti-infrared camouflage net and be safe from the next door neighbours' newly acquired body heat detector, also available from *LS&B* advertisers.

Then, of course, there are the guns. The issue of *LS&B* I read pre-dates the new firearms laws, so the range is phenomenal. Hand guns, semi-automatic rifles, laser sights, pump action, bolt action, you name it.

I know most of the theories about the security forces, ASIO and the SIS are just there to make life difficult, the police are tools of the politicians. I tend not to agree with those views. Properly controlled and regulated by legislation these services are useful and, unfortunately, necessary. Somewhere in Queensland is a man in a hole. He's peering at the world through tank periscopes while he eats cold food from tins and listens to his radio, waiting for the big day. He's got with lots and lots of guns, all of them sealed in airtight plastic tubes. All his bunker furniture is made from ammunition crates. His

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Bob Carroll: Skeptical lexicographer

Richard Cadena

This article begins a series of four interviews I conducted earlier this year while visiting in the US. Future interviewees will be Bob Steiner (of Steve Terbot fame in Australia), Michael Shermer (Publisher of *Skeptic* magazine and Director of the Skeptics Society), and James Randi (Founder and Director of the James Randi Educational Foundation).

Bob Carroll is a Professor of Philosophy at Sacramento City College in California, USA. He has placed on the Internet an outstanding Skeptical resource, *The Skeptic's Dictionary: A Guide for the New Millennium* <www.skepdic.com>. The dictionary provides definitions, arguments and essays on subjects supernatural, occult, paranormal and pseudoscientific. *The Skeptic's Dictionary* does not try to present a "balanced" account of these subjects. If anything, this book is a Davidian counterbalance to the Goliath of pseudoscientific literature. Another purpose of *The Skeptic's Dictionary* is to provide references to the best Skeptical materials on whatever topic is covered. An added bonus is the reader comments section, on many of the definitions, with Bob's responses. A definite must visit for any Skeptic.

Richard Cadena: You've said in other interviews that you started being a Skeptic very young. What started you outwardly expressing your Skepticism? I'm assuming that at age 7 you didn't walk around telling people what you thought.

Bob Carroll: *I've been teaching logic and critical thinking in college for some 20 years. I suppose a lot of it started there, where students would bring up issues and questions that needed to be examined from a Skeptical point of view. I realised that my responses need to be more systematic than just an opinion here and an opinion there.*

In an Introduction of Philosophy class, I remember a student coming up to me after the first lecture and saying "I don't think I want to take this class because I don't think this is really about philosophy." I asked, "What do you think philosophy is?" He replied "Well, it should be metaphysics." I said, "We are going to talk about metaphysics." He said "But you didn't say anything about palm reading or crystals or anything like that."

*It is true that a lot of younger people are getting this type of information, they have been to fairs where this is going on. In fact, you can look in the phone book under Metaphysics and there will be palm readers and people selling crystals. Book stores will often feature the same kind of stuff in sections with Philosophy headings. I remember looking in a book store for L. Sprague de Camp's *The Ancient Engineers* and finding it, with the help of clerk, in the astrology section!*

It started with my teaching, with my classes. I didn't re-

ally start writing a lot on this until about five years ago. I suppose it was the realisation of my mortality. A couple of people close to me died in a short period of time. I've always found writing to be therapeutic.

I found myself writing and collecting other things that I had written and I ended up with the Skeptics Dictionary on the Internet. I happened to be learning about the Internet and constructing a web site at the same time I started doing the writing. The next thing I knew I had 25 articles on the Internet and now it is over 300.

RC: That was in 1993?

BC: Yes 1993/94.

RC: Are you still planning on publishing a book of *The Skeptics Dictionary*?

BC: Yes, I'm revising everything, (I'm up to 'N'). I haven't made a strong effort to send out queries for publishing yet.

RC: Any media contacts for comments?

BC: *I have been contacted sporadically. The Village Voice and others. Mostly over the Internet. A reporter from the LA Times had done an article on DKL (the electronic dowser). He is a science writer who had seen my stuff on the Internet which is why he contacted me for more information.*

[Since this interview, Bob has done interviews with Jane Little of BBC World Service on the end-of-the-world predictions for July 1999, Barry Bortnick of the Santa Barbara News-Press on von Daniken who was speaking in Santa Barbara, and Scott Schaeffer's Yeah Right radio show where he played the bad guy on the topic of angels. Recently, Bob was one of several people interviewed by the Sacramento Bee for a story on the Internet as a source of information.]

RC: If you could eliminate one stream of pseudoscience, for example people would all realise that astrology was ridiculous, which one would you eliminate?

BC: *I would get rid of the health fraud people. The way they exploit people and take advantage of people. The harm they do is much more than that of any of the parapsychologists or astrologers.*

RC: How do you avoid the frustration of being a Skeptic in an increasingly pseudoscientific world, pushing the ball of Sisyphus as it were?

BC: *That is where one's philosophical training comes in. You have to be a stoic. You have to have an attitude, and I have this attitude, I will explain things to you and argue with you*

but if you think you can walk through walls then you go ahead and walk through walls. I'm not going to lose any sleep over it. It is frustrating to think you can't reach a large number of people. On the other hand, you're not going to be very healthy if you lose sleep over it. You have to be indifferent to how people respond to you. You can't control other people's reactions or responses to you. You can only control your response to their response. I know this frustrates a lot of people I deal with because they think I don't care. My attitude is: I care, but not in the way you care.

I've had one student, a rabid Muslim, who followed me everywhere. He would follow me to my office after class. He would follow me down the hallway. He believed he had to bring me around to his belief in God or something bad would happen. I kept telling him "Just leave me alone. I'm glad you're concerned, I'm happy you are worried about me but GO away." I'm not going to follow anyone down a hallway. I give people my arguments and my positions and if they want to follow it fine. If they don't want to follow it, that's fine too.

RC: A lot of Skeptics don't 'do' God. They choose not to talk about that.

BC: Even though I have entries on God, angels, miracles, faith, etc., in the Skeptic's Dictionary, I get criticised for not doing enough. I probably get at least 1 or 2 suggestions a week asking why I don't go after Christianity, Islam, Mormonism, etc, etc, etc. So whatever you do, you are not doing enough from some people's perspective.

I know what you are talking about. For a long time CS-ICOP (Committee for the Scientific Investigation of Claims Of the Paranormal) was criticised for pretty much steering away from anything religious. I think they have changed a bit in that direction. I think part of it is philosophical.

There is one religious tradition that basically says, "I am not claiming that this is science, I don't have hard evidence for these supernatural claims." This is different from someone who claims, like a creation scientist, "this is science, there is evidence for supernatural beliefs." I think Skeptics have every right to go after such people as the creation scientists with all our talents and skills.

I think people who don't claim their religious views are scientific have the right to be respected and not be attacked, as long as they don't make highly improbable empirical claims. They are not pseudoscientists because they are not claiming that they are scientists at all. Of course, there is obviously a positive side to religious institutions. Some people, apparently, wouldn't control their behaviour if they didn't believe in God. So we are just thankful that such people continue their beliefs in the Almighty.

RC: What is the name of the course you teach?

BC: It is called Introduction to Logic, but it is mostly a course in critical thinking.

RC: Is it a required course or elective course?

BC: If you transfer to the California State University system from a Community College, you have to take at least one 3-unit course from a selection of courses that are called Critical Thinking courses. My course is one of those required electives.

RC: That sounds like a great requirement. Too bad we don't have that in Australia. No doubt you run into people in your class who have pseudoscientific beliefs. Can you see a difference in the students based on the type of subjects they are studying?

BC: Science students are usually pretty hip to pseudoscience. There is an interesting mix because Community Colleges in California is based on an interesting concept: anyone who "can benefit from instruction" may attend. Not only do we have kids coming out of high school who haven't got a clue what they want to do but we have some really sharp students who see us as an inexpensive way to get two years of education before they transfer to University. We also have vocational and re-entry students. Some are community people who are retired and just want to take a philosophy class.

RC: The college that you teach at, are they aware of your Skeptical views and your Skeptical Dictionary? Do they have any opinion of it or is it viewed as your private life?

BC: Now this is serious, really serious. I believe that the people at my college don't know anything beyond their own door. They probably have no idea what anybody does outside of their classroom. Outside of a few colleagues that I'm pretty close with and who know about the Dictionary I would say the vast majority haven't got a clue about anything I or any other instructor does.

RC: There are other professors who teach Introduction to Logic?

BC: Yes.

RC: And they would teach it differently from you?

BC: Sure. We aren't told what book to use or how to teach the course, we are trusted to do the job of teaching the course. There are about 8 or 9 of us teaching. Most of us are doing a critical thinking approach but we may not use the same books although we cover the same areas. I don't teach a Skepticism class. I don't think critical thinking is identical to Skepticism. Skepticism is part of critical thinking. To be a critical thinker you have to have a healthy Skepticism but Skepticism is just one aspect of critical thinking. (Laughs) I probably emphasize it a little more than maybe some of my colleagues do.

RC: What part of critical thinking would not be encompassed by Skepticism?

BC: Some if it is pure psychology. To give you one example, in my class I always start off talking about things which hinder us from thinking critically. Psychology has made some contributions here with "confirmation bias" as talked about by Francis Bacon in the early 17th century. How it is a natural human tendency to find, not just to look for but to find, confirming instances of what we believe. Whatever we are taught or whatever theories we have, we find it easy to find support for them. A lot of people don't recognise that, how easy it is find 'proof' or support for whatever you believe. Bacon pointed out that you have to look for negative instances. Now, he didn't know how to look for negative instances. His

method doesn't really work for figuring out negative instances but modern psychology and science has developed a number of techniques to make sure you do take into account negative instances. Controlled, randomised, double-blind tests. The studies on confirmation bias. That is not really skepticism as much as it is a positive guide to restrain yourself from making rash judgments.

RC: Tell me your thoughts when I mention the other people I will be interviewing. Bob Steiner?

BC: He sent me a copy of his book and I liked it so much I recommended him to our staff development people and asked them to invite him up to do a presentation. He does a performance, I guess it is a mentalism show, and afterwards reveals he doesn't really have psychic powers.

Actually, from what I have read of the different ways of trying to persuade people to give up some of their beliefs in weird things, this is one of the best methods. One way, which most of us try, is through argument, and that is usually the least effective. Showing people the magic, or having them learn to do it themselves, is more effective. I have an assignment where my students create their own pseudoscience; my hope is that by creating it from the inside they can see how easy it is to do.

I haven't seen Steiner perform, but apparently he demonstrates how he does his "psychic" tricks.

Vanassy and Singer, a couple of psychologists, did a study with their students where they had someone come into class and introduced him by saying something like "This is Craig, he thinks he is psychic, but we know he is not really psychic, and he is going to try some tricks on you." In another class he was introduced something like "This is Craig and he is psychic." They tried to see if there was any difference when the students were told that Craig was psychic or not psychic. They found that there wasn't very much difference in the beliefs. Maybe if Craig had demonstrated how he does his mentalist tricks more students would have doubted his psychic powers.

RC: Michael Shermer?

BC: I'm not a public person and so I admire anybody that can go on television with James Van Praagh* (laughing) or anybody like that. I couldn't keep a straight face; I couldn't possibly do anything like that because I would just break-up laughing. These people are so preposterous to me that I find it very difficult to take them seriously.

Yet, I've seen Michael Shermer, who is very good at demolishing people like Van Praagh, unable to move an audience of true believers. You notice that most in the audience don't like Shermer; they like Van Praagh. Why is that? In some ways, debating and demonstrating for true believers is a losing battle, but I really admire those people who go out there and fight it anyway. He has done a wonderful job starting the Skeptic magazine and keeping it going. The series of lectures he has at Cal Tech are really wonderful.

[**RC:** The Skeptic Society has monthly lectures at Cal Tech University in Southern California]

RC: As a professor, you'd be interested in Michael Shermer's book *Why Professors Believe Weird Things*?

BC: Well, I have a lot of colleagues who definitely believe

weird things. In fact, one colleague is a PhD in History and is an astrologer. You can imagine the conversations we have. He does charts for me and gives me reasons why he believes in astrology. I keep giving him copies of articles Ioan Kelly sends me from Canada. He reads them and we talk about it but I don't really believe I could ever dissuade him from his belief. He is just convinced it works. I try to point out that he is selective in what he means by 'works'.

RC: Perhaps you should try the Astrology is Bigotry argument?

BC: Yes, I'll have to give that a try.

RC: Randi?

BC: Of course, Randi is one of my heroes. Has been for a long time. I have a lot of admiration for everything he has done and he is still plugging away at 70 years of age. It is a real pleasure to have him on our side. I wouldn't want to have him as an enemy.

RC: I know you aren't at the forefront of publicly speaking about skepticism, but do you have any plans to speak at the Skeptics Society Cal Tech lectures or visit Australia for one of our annual conferences?

BC: I have no plans. I'm open to the idea but at the moment I have no plans. I spoke to a small group of Humanists in Sacramento a few weeks ago but that is it.

RC: Well, if you ever get a chance to visit Australia, we would love to have you give a talk.

BC: I would be interested, especially since one of your members wrote me and said he was the member of a golf club in Melbourne that is extremely nice.

RC: There are some fantastic golf courses in Melbourne.

BC: I think every Skeptic should play golf. It keeps you humble.

Richard Cadena: Thanks for your time, Bob. Be sure to visit www.skepdic.com

*James van Praagh has achieved a considerable amount of recent media attention in the US, based on his self-proclaimed, but wholly unsubstantiated, ability to speak to the dead.

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wardrobe consists of three camouflage smocks and a chemical warfare suit. All his water is bottled. He reads by laser light. His reading material consists of survival magazines, weapon conversions guides and Marvel comics. The entrance to his bunker is concealed behind camouflage netting. His only friend is his dog, a bull terrier with a bad attitude.

If he ever emerges from his bunker, I personally would feel much safer if the police, ASIO, SIS, SAS, ATSI, PLO, USAF, NATO, IRA, UNESCO, FBI, AMA, ANL, RSPCA, NRMA and EBE (Every-Body-Else) were to be there.

Recovered memory practices

Neil Woodger

Summary of a talk given by the author to the False Memory Association, ACT Branch on March 23, 1999.

The false memory / recovered memory debate is a very bitter one. It has led to divisions within families, and between many other people, including those in the helping professions. Historically the issue has arisen in the context of rapidly emerging concern for the rights and health of people who have been victimised. Earlier impetus for this concern was provided by the finding that some people, mostly men, who had served in the Vietnam War were in poor health and whose condition had gone unacknowledged. As a consequence of efforts to correct this situation, attention was paid to other groups in the community, specifically victims of violence and sexual abuse, including incest. More recently, this concern has been extended to victims of politically directed torture, often encountered in a refugee population.

A mental health (psychiatric diagnosis) of Post Traumatic Stress Disorder (PTSD) was established in the 1980s which helped many to understand what was wrong with them, as well as providing a means by which they could seek compensation. PTSD is characterised by intrusive memories, efforts at avoiding reminders, constantly being on the alert, being easily startled, and other symptoms. Being very nervous (negatively aroused), and sleeping badly are two examples.

In PTSD, sufferers often make every effort to "forget" what happened. Unfortunately their efforts often fail as modern evidence suggests that a "dysregulated" (malfunctioning) nervous system is the source of how they feel. Studies of insomnia associated with PTSD provide good evidence on this point.

Reports of terrible experiences being "forgotten", then recovered, usually in conjunction with a sympathetic therapist or counsellor, are in marked contrast with the above description of PTSD, with its intrusive memories in the form of nightmares and flashbacks.

It is difficult to understand the debate without putting it into an historical and cultural context. It has been very prominent in the USA, well known for its collection of cults, religious fundamentalists, and other groups whose view of the world can be hard to follow. This phenomenon may reflect the desire of a lot of people for certainty in a demanding world, perhaps leading to the too ready acceptance of simplistic ideas, and allowing people to avoid more challenging lines of thought. It is easier, for example, to think of a person who commits some crime as essentially evil, rather than see his/her behaviour as the end result of a complex process or social force such as poverty.

Those people charged with the task of helping others are themselves vulnerable to the many forces which have shaped the debate. One early source of pressure may be the impact on the listener when suddenly hear-

ing for the first time of a dreadful experience suffered by the other person in childhood. Helping professionals are subject to what is known as "empathic distress". They can become aroused and angry on a client's behalf. Such reactions pose challenges to a professional's necessary objectivity.

Other forces operate. Some helpers may find themselves the subject of public attention when making statements about their experiences listening to clients tell their stories. Details of horrific experiences are newsworthy. The conclusion that these events did not occur, or could not possibly have occurred, is of limited interest to the media. Some practitioners may understandably see a commercial opportunity as they begin to attract more referrals. In the USA the term "traumatologist" has arisen to describe a trauma specialist.

Good professional practice in the area of traumatic memories can usually be identified. Bodies such as the Australian Psychological Society (APS) have published guidelines to its members on this subject. There are, however, many problems. Not all psychologists are members of the APS. While all psychologists in Australia have to be registered with their State or territory Registration Board, the qualifications necessary for registration are a minimum standard only, and therefore not a comprehensive guide to expertise and competence. Some helpers are known as "counsellors", a professional sounding title but one which is totally unregistered, and therefore uncontrolled. Good counselling skills are on the other hand no one's exclusive preserve. Some people without formal professional qualifications do possess good counselling skills. I would argue nonetheless that good counselling skills by themselves are a *necessary but insufficient* basis for responding competently to the challenges presented in this debate.

So what does constitute competence in this area? How can aggrieved people make complaints, or seek a fair hearing? There are a number of factors to keep in mind. Is the helper a professional in the true sense, or more lightly trained, or not trained at all, ie, self styled? To what profession does the person belong? A person known as a counsellor may in fact have a psychology or social work background. Is the helper in private practice, or a public sector employee? The latter most likely has a management structure to whom he/she is accountable. In the case of psychologists both groups, private and public, will be accountable to the local registration board. Professional associations have complaints mechanisms, eg, the APS Ethics Committee. A psychologist who is a member of the APS but, for example, declines to adhere to the APS guidelines on Recovered Memories could be the subject of a complaint by this method.

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that even events with extremely low probabilities easily fell within the realms of possibility¹.

However the party was spoiled by a few unresolved discrepancies such as Olber's Paradox (why was the night sky dark when there was supposedly an infinite number of stars?), the gravitational potential paradox (in an infinite universe there should be an infinite gravitational force), results of the Michelson-Morley experiment (proof that the speed of light was constant, a cornerstone of relativity theory) and finally the background cosmic radiation that provided the most significant evidence for the Big Bang model of the universe.

The biggest problem with the Big Bang theory of the origin of the Universe is philosophical, perhaps even theological: what was there before the bang^{1,4,5,7,8}? Creator proponents may argue that we can postulate any kind of model we choose, if we still cannot overcome the cornerstone problem of obtaining something from nothing.

The oscillating model of the universe was thought to overcome this. In the oscillating universe model, the universe is presumed to not only have enough mass to bring the expansion to a halt (via gravity), but also enough to reverse the expansion. However, rather than crunching itself into a "singularity" the imploding universe somehow bounces back and expands again and so the cycle continues. An infinite number of such cycles was thought to "relieve us of the necessity of understanding the origin of matter at any finite time in the past". Our existence could then be attributed to one lucky bounce out of an infinite number. However there is currently significant evidence against this model and even though it seems elegant at first glance, it most probably does not adequately model the universe.

Quantum mechanics has also been invoked and while it can answer many unresolved questions such as how something can appear from nothing, it is often misused as a convenient explanation of the origin of our universe. Heisenberg's uncertainty principle allows a finite amount of energy to pop into existence for a finite time length, however the time/energy product is tightly bounded. It does not allow for something with as much energy as a universe to exist for any meaningful length of time².

Today's best estimates are that the total energy (and its mass equivalent), momentum and charge of the universe are zero (within a small zero point energy that results from quantum fluctuations), the positive energy of matter being balanced by the negative potential energy of gravity². Since the total energy of the universe is zero, no energy was needed to produce the universe and thus no physical laws were ever violated. Under this postulate we would essentially have a universe that totals nothing and therefore have nothing to reconcile. We started as nothing, there is nothing now and we can be guaranteed that we will end up with a grand total of nothing.

Note also that one cannot ask, much less answer, "What happened before the big bang?" since no time earlier than the Planck time (10^{-34} seconds) can be logically defined. Our definitions of time and space before the big bang is meaningless.

Entropy and the Second Law of Thermodynamics

One of the most commonly invoked and misinterpreted laws of physics is the second law of thermodynamics^{2,3,4}. This law requires that the entropy (disorder) of any closed system must increase or at least stay constant with time. It is often used in arguments regarding evolution and the existence of the universe, to support claims that the complexity that we observe could not have arrived without the influence of something which exists outside the law.

The fundamental principle of evolution - the concept of development, with increasing organisation and complexity - may seem to be contradictory to these irrevocably established laws of energy and entropy, conservation and deterioration. Believers in a creator say that systems cannot self-organise because that would violate the second law of thermodynamics, ignoring the fact that such systems are not in equilibrium and are open systems. If evolution were impossible under the second law then it would also forbid babies from growing to be adults, and parents from having children. We are in fact, agents of entropy: we organise our bodies at the expense of the organisation of our environment, which we digest and burn.

The second law affirms the fact that the creation of matter or energy cannot take place and in fact the available useful energy of the universe as a whole is continually running down, rather than building up. In truth, matter is currently being created and destroyed. More importantly the available energy of the universe as a whole says nothing about localities within it. The Earth is hardly a closed system. To find a large source of negative entropy, one need only look upward on a clear day. The sun delivers about 750W per square meter of free energy to the biosphere. Likewise, meteors, comets and asteroids shower us with several tonnes per day of extra mass and transfer huge amounts of mass, energy, and momentum to the Earth. Orbital perturbations and decay, friction from the moon's gravity, and radioactive decay all add to the total.

Another argument involving entropy implies that the universe started out in a greater state of order than it has today, and so must have been designed. However this argument holds only for a universe of constant volume. In an expanding universe the maximum allowable entropy of the universe is continually increasing, allowing more and more room for local order to form as time goes by. If we extrapolate the big bang back to the earliest definable time, the so-called Planck time (10^{-34} second), we find that the universe started out in a condition of maximum entropy - total chaos. The universe had no order at the earliest definable instant. If there was a creator, it had nothing to create.

It is also worth noting that it is easy to get very complicated systems which contain a tremendous amount of information starting from very simple, low information systems. Two of the better known ways are via fractal structures and chaos. With fractal structures one starts with a very simple rule and repeats it many times. The resulting structure can be, and usually is, extremely complex, but the formation equations can be very simple. A snowflake is a good example.

Another way to produce extremely complex systems is via chaos theory - very, complicated systems can evolve if there are nonlinearities in the progression. That

is why weather forecasting is so unreliable. Complexity does not imply design. Recursion and nonlinearity can provide extremely intricate, complex systems and the fact is that the world is recursive and very nonlinear.

Evidence of design

So far we have examined the concept of creating something from nothing, the fine tuning of physical constants, some philosophical arguments and the second law of thermodynamics. But what about the laws of physics themselves? Where did they come from and why are they what they are? Do laws require a law-maker^{1,3,4,6}? This is answered to some extent by the fact that the laws had to be something and this is the universe that we happen to be in (the tattsлото argument revisited).

We are now beginning to grasp how the laws of physics could have come about naturally, as the universe spontaneously exploded in the big bang. However the laws of physics, at least in their formal expressions, are no less human inventions than the laws by which we govern ourselves. They represent our imperfect attempts at economical and useful descriptions of the observations we make with our senses and instruments. This is not to say we subjectively determine how the universe behaves, or that it has no orderly behaviour. Few scientists deny that an objective, ordered reality exists that is independent of human life and experience. We simply have to recognise that the concept of "natural law" carries with it certain metaphysical baggage that is tied to our traditional, pre-scientific modes of thought. We are going a step beyond logic to conclude that the existence in the universe of order, which we conventionally label as the laws of nature, implies a cosmic lawgiver².

We are learning that many of the laws of physics, those that seem the most universal and profound, are in fact little more than statements about the simplicity of nature that can almost go unsaid. The "laws" of energy, momentum, and angular momentum conservation have been shown to be statements about the homogeneity of space and time. The first law of thermodynamics, conservation of energy, results from there being no unique moment in time. Conservation of momentum follows from the Copernican principle that there is no preferred position in space. Other conservation laws, such as charge and nucleon number, also arise from analogous assumptions of simplicity².

By an equally simple but somewhat different argument, the second law of thermodynamics is found not to be some underlying principle of the universe but rather an arbitrary convention we humans make in defining the direction of time. Physics does not forbid water spontaneously boiling or other violations of the second law. No mechanical principle prevents the air emptying from a room when you open the door, killing everyone inside. Physics does not forbid a human from growing younger or the dead rising. All that has to happen for these "miraculous" events to occur is the molecules involved have to accidentally move in the right direction at the right instant. Of course these miracles are not observed to happen except in fantasies, but only because they are so highly unlikely.

We introduce the second law of thermodynamics to codify what all of human experience testifies, that air

does not empty from a room, people do not grow younger and the dead do not rise. But these events are not impossible, just highly improbable. Influenced, like Newton, by our culture, we falsely state that these unlikely events cannot happen because the second law "forbids" them from doing so.

The second law of thermodynamics, along with the arrow of time and the notions of causality and determinism, arise as statistical statements about the likelihood of events that emerge as principles we invent to describe the world of everyday experiences.

Other, more complex and less universal, laws of physics appear to arise from spontaneously broken symmetries. When a quantity such as momentum is observed not to be conserved, we introduce the notion of a "force" to break the corresponding spatial symmetry. By this means the force laws and other principles that give structure to the universe arise as spontaneously broken symmetries - accidental, uncaused events that occurred in the first fraction of a second of the big bang as the expanding universe cooled.

Summary of arguments

So is there a need for a creator? If anything, science indicates quite the opposite. Astronomical observations continue to demonstrate that the Earth is no more significant than any of the other uncountable number of stars or planets known to exist. While a created, human-centred, universe can never be ruled out, nothing in our current understanding of cosmology and physics requires it. Furthermore, we are beginning to understand the possible physical mechanisms for the appearance of matter from nothing, and for organisation without design.

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- 1 www.reasons.org/astroevvid.html
- 2 www.talkorigins.org/faqs/
(This site is an incredible resource outlining almost all of the most common arguments creationists tend to use. The information is well presented and accurate.)
- 3 www.iclnet.org/clm/real/ri9403/evidence.html
- 4 www.doesgodexist.org/pamphlets/mansproof.html
- 5 www.pcniter.net/users/chawman/proof9.html
- 6 www.roga.demon.co.uk/god.html
- 7 www.infedels.org/library/modern/jeff_lowder/ipnegep.html
- 8 www.self-realization.com/prooffor.htm
- 9 www.heraldmag.org/98ja_3.htm
(Hugh Ross¹ and Walter Bradley² typify a new breed of creationists who are using scientific arguments to influence people to believe in a biblical God. While a lot of the evidence they present appears credible on the surface, they often choose to ignore pertinent evidence and have a nasty habit of misquoting respectable scientists.)



... Memories from p 27

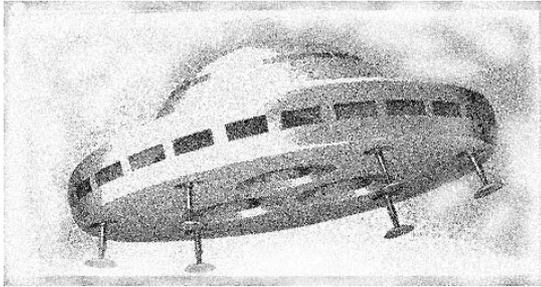
Conclusion

The issues involved in the false memory debate are complex. The symptoms presented are often severe. Assessment and diagnosis are difficult tasks. Clinical psychologists and psychiatrists are expected to deal with the more severe mental health problems. Hence it would appear logical that these two professions provide leadership in this area. This has not always been the case. People from other groups and agencies have taken the initiative, pinpointing injustices as well as needs. The debate requires open mindedness and rigour, two key elements that have at times been pushed aside.

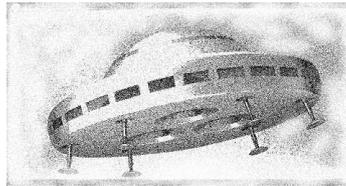


“Angel’s Hair” explained

David Maddison



Recently (June 22, 1999), while driving through Tarcutta, NSW, I observed an unusual phenomenon. Being a good Skeptic I tried to document this event and took photographs of it. What I observed was millions of cobweb-like or “gossamer” threads floating along in the sky, some of these descending low enough to get trapped in power lines or trees, and some occasionally reaching the ground. These artefacts apparently had an extremely low density and would remain aloft in the slightest breeze at a much slower speed than walking pace. Not being familiar with this phenomenon, and not yet having been able to obtain any samples, my immediate thoughts were that these threads were possibly either the remains of a filament-wound rocket motor case that had burnt up on re-entering the atmosphere or detritus from an RAAF anti-radar chaff-dispenser or infrared anti-missile decoy flare (since there was a military base nearby).



Reports of “gossamer” threads falling out of the sky are often associated with UFO sightings. Skeptics often have to deal with claims by UFO spotters that such material, also known as “Angel Hair”, is a by-product of the UFO’s engine. A first-hand account of such an observation may be read at:

http://www.ufoinfo.com/ufoicq/1998/ufoicq98_7.html
which is the Web page of UFOINFO.

One incident called the “Angel’s Hair Case” occurred on 10th August, 1998 and a report from Tamworth’s *Northern Daily Leader* is quoted at the Web site.

Mrs E Stansfield, 61 years, said that she saw cobwebs falling from sky. She saw 20 silver balls “... when some of them manoeuvred and increased speed this cobweb-like substance started to drop to the ground. Some of it got caught on the telephone lines...” When she went out to her daughter she too was covered in a fine film of cobwebs. When she tried to pick it up it disintegrated in her hand. The family car had cobwebs all over it. John scooped it up and put it in a jar it to save it, but it disintegrated. Mr E Stansfield stated that they were flying higher than local air traffic.

The Web site carries further reports as follows:

The “angel hair” UFO spectacle at Quirindi on 10 August, 1998, has now been the subject of interviews and investigation. Moira McGhee of INUFOR spoke with the family on the evening of 11 August and arranged for a sample of the material, which had been sealed in a yogurt container with glad wrap and rubber band, to be dispatched to her. It was packed with a cardboard cover and securely sealed (we hope!). Moira kindly made the sample available to me on Saturday 15 August.

Bryan Dickeson of UFOR(NSW) also spoke with the family.

I have undertaken discussion with some specialists working with me and we are attempting to arrange at least gas chromatography. The determination of detector and column combinations has to be determined. We may also try to undertake some micro video imaging if the nature of the sample permits it. I have discussed the incident at length with 2 of the witnesses. Mrs Eunice Stanfield told me that 2 strands of the material originally about 3 feet long were put into the container. They were “evaporating” and she indicated that prior to dispatch the material appeared to have reduced in volume to about the size of a match head. Because of this we have cooled the sample. It is currently held in a freezer. This will assist us to determine if phase changes occur.

Because of the severe sample limitations we may only get one crack at this. I will advise all concerned of any results. I have refrained from opening the sample to facilitate needle sampling under control sampling conditions, if this is determined as a viable option.

Apart from my physical trace interests, the following account of my own experience with apparent “angel hair” will serve to highlight that I have more than a passing acquaintance with the subject. Is it spider’s web or something more exotic? We will have to wait and see.



The account of another instance of “Angel’s Hair” mentioned in the above paragraph continues:

The light material appeared to consolidate into long, substantial whitish strands that could be seen falling slowly downwards all around the local area, onto telephone wires and trees. It was not being blown by the wind - there was no wind - there had been several days of heavy rain previously ... ; Monday was the first clear, clean blue-sky day after this rain. The air temperature was still cool and wintry.

The white material appeared to be carried by slight warm-air “thermals”. Very little of this material actually landed in Eunice’s place, but pieces fell in surrounding areas and on the street nearby. Noelene first retrieved a 30-cm strand from a nearby bush - it was extremely light, whitish and strong, like cotton, requiring a good tug to break. It quickly “dissolved” away to nothing when handled.

Noelene retrieved a second piece which was about 90 cm long and which seemed to be made up of two separate strands. This was put into a clean yogurt container with a piece of glad wrap over the top and a rubber band to hold the glad wrap in place.





The story goes on:

The yogurt-container 'sample' has since been passed on by Moira McGhee to UFO researcher Bill Chalker (on Saturday evening 14 August) for laboratory analysis via his contacts - for gas chromatography tests, in vacuum, by a Sydney laboratory. The package still had not been opened in Sydney on Saturday evening, to check the state of its contents, *however...* the Angels hair (AH) sample may have already sublimated altogether.

Reports of AH are fairly common from the 1950s and 1960s (much rarer recently). One author (Dickeson) remembers a personal AH incident from March 1958 (when aged 7) in New Zealand when a small hank of fibres landed on his sleeve from a completely clear blue sky and sublimated within 5 minutes before he could get home 2 kilometres away to show parents.

There are extremely few good AH cases from the late 1960s to 1990s. Most incidents have since been attributed to 'gossamer' incidents (the massive accumulation of web-parachutes created by millions of small spiders for seasonal dispersal/migration - AH ideas have fallen out of favour in recent years due to the lack of good, recent examples.)

Theories from 1950s (1959) and 1960s re angel's hair could now be tested fairly reasonably if UFO researchers have good/prompt access to gas chromatography and X-ray crystallography equipment. Back then, AH was seen as a sort of polymer of air molecules (nitrogen and oxygen) caused by the unusual high frequency, electromagnetic and plasma effects associated with some UFOs (especially spinning disks). For example, in a fairy floss/candy floss machine, coloured sugar is melted in a small, heated, rotating cup and flows outwards through tiny holes in the walls of the spinning cup by centrifugal force. When the molten sugar hits the air it cools into the fibres of coloured sugar-glass we call fairy floss.

Similarly, AH is thought to form by a metastable polymerization of nitrogen and oxygen. The plasma electromagnetic effects near UFOs create highly-directed, 180 degree metastable N-O bonds, which link up into long polymers/fibres around a quickly-rotating body such as a disk, or in air streaming through the magnetic field generated in the central cylindrical section of a bar-magnet-type field. This is consistent in the Quirindi case with a moving dumb-bell-shaped object, where AH was seen to form behind the object. This 180 degree bonding seems chemically possible using some of the so-called 'forbidden' electron states of nitrogen and oxygen (states which are usually only seen to occur in some aurora phenomena in the near-vacuum plasma environment at the top of the atmosphere, and which can be simulated in the laboratory). These bonds are, however, unstable under normal conditions and the N and O atoms drop off the ends of the AH fibre and return to their usual N₂ and O₂ states - that is, the fibres sublimate from a solid to a gas without melting (to a liquid) in between.

If you have ever used an out-of-synch arc welder, you can (under the right temperature and moisture conditions) create small amounts of a similar sort of white 'ash' at the electrode, which quickly sublimates. Also, a light white material is created momentarily by the sparks from a large, discharging Van de Graaf generator in the laboratory. (Bryan Dickeson has seen this phenomenon at the School of Electrical Engineering at 11 am, in Christchurch New Zealand in 1974. A path of 'ash' an exactly duplicate the shape of the discharge sparks is created. This always floats downwards for a second or so, presumably under the influence of gravity, before fading/disappearing. The two electrical engineers present acknowledged this phenomenon and said it didn't seem to be a visual artifact created on

the eye retinas of observers by the bright discharge spark, but weren't interested/didn't know what it was.) This material has (to our knowledge) never been analysed, because it's seen to have no commercial/research potential.

For ufologists, recreating AH in the laboratory could well indicate the sorts of electromagnetic conditions found near UFOs. Any information Bill Chalker's analysis team can find about the Quirindi material will therefore be most welcome. (Peter Turner, Bryan Dickeson, 18.08.98)

I asked a couple of the Tarcutta locals did they know what the material was that was falling out of the sky and they did not know, nor had they seen it before. I then spotted someone standing near a hot air ballooning company vehicle and I assumed that he might be familiar with this aerial phenomenon. Fortunately he was and he said it was spider web and it related to the method by which young spider hatchlings travel to new areas.

Using Occam's Razor I considered this to be the most likely explanation, but decided to do further research. I managed to obtain a sample of the material, and it did indeed look very much like spider web although it was more "fluffy" than web. It was extremely light and fine and would appear to disintegrate easily, mainly because it was somewhat sticky and stuck to itself, forming itself into a tighter and tighter ball if it was manipulated in any way. The fibres were also of extremely low density and would float, or rather be dragged along in the air with little or no apparent wind. Also, the fibres were quite strong which is not surprising since spider's silk is the strongest natural fibre,

It seems that after many spiderlings hatch, they travel to other areas by the method known as "ballooning". To do this, the spiderling waits for a breeze, then climbs to a high point and points its silk spinnerets into the air ejecting threads of silk, which emerge from the spinnerets partly by being caught by the breeze and partly by the spider forcibly ejecting them. Once enough silk is ejected, sufficient drag is created for the spiderling to be dragged off into the air and because of the low density of the combined spiderling and silk strands it can be blown along in the slightest of breezes for a long time. In fact, sailors have observed ballooning spiders 320km out to sea, and they have been observed at altitudes of between several metres and 800 metres.

The young of a large number of spider species travel by the ballooning method. According to a spokesman I contacted at the Insectarium of Victoria, 80-90% of the class



Continued p 34 ...

Banking benefactors

Richard Lead

In the past year I have addressed a number of Australian Skeptics' public meetings on financial scams. At each meeting, the loudest audience guffaws came when the generosity of one of Australia's more entrepreneurial banks was exposed.

Bank deposit rates are currently miserable – it is hard to get 4%. Yet the Macquarie Bank has been offering investors a one-year bond paying a robust 10.14%.

There is only one problem – the minimum investment is \$500,000.

You don't have a spare \$500,000? Don't worry – the Macquarie Bank will lend you \$500,000, and only charge 9.98% on this loan. You pay the Macquarie Bank \$49,900 interest on your \$500,000 loan, and the Macquarie Bank pays you interest totalling \$50,700 on your \$500,000 bond.

Every philosopher on Earth is now out of a job – we finally have conclusive proof there really is a god.

Now – there has to be a catch, and of course there is. Your \$49,900 interest must be paid to the Macquarie Bank in advance, while the Macquarie Bank pays your \$50,700 after twelve months.

You don't have a spare \$49,900? Don't worry – the Macquarie Bank will lend you \$50,700 at 9.98% to help you pay this interest!

So now you have borrowed a total of \$550,700 at 9.98%. The total interest charged is \$55,000 (as you must pay interest on interest!) and you are still \$4,300 short.

You don't have a spare \$4,300? No – the foolishness stops at this step. The investor ends up being \$4,300 out of pocket, representing the Macquarie Bank's fee for shuffling a few pieces of paper.

Now why would any rational, sentient person borrow and immediately re-lend these sums, just to come out \$4,300 poorer? The Macquarie Bank's glossy single-page brochure coyly states:

'A tax deduction may be available for interest paid upfront on the Bond.'

Of course – a \$55,000 tax deduction this year, followed by \$50,700 in assessable income next year. Especially useful for those about to retire, or even better, those about to become nonresidents.

And there we have it – this is nothing more than a variation of the prepaid-interest schemes which proliferated in the 1970s and were duly struck down by the courts. To try to add a touch of commerciality to the product, the bonds are linked to various listed shares, with the \$4,300 fee reduced in line with share price movements. But as the shares must move more than 30% in order for this fee to be reduced to zero, any claim of commerciality is feeble. Particularly when you learn the product can't be unbundled – a wealthy investor with \$500,000 in cash can't simply invest in a 10.14% bond. The \$550,700 loan at 9.98% is compulsory.

The Macquarie Bank's brochure is careful not to give

tax advice, instead recommending investors seek their own professional tax opinion. And accordingly, I have been driven around the bend each June for the past few years as high-income earners sought comfort on this year-end tax shelter. The standard incredulous client response to my negative advice was along the lines 'but it *must* work – it's the Macquarie Bank.'

I understand many billions of dollars have passed through this financial round-robin over the past few years.

The Australian Tax Office has belatedly responded. In June 1999 the ATO announced it will retrospectively deny tax deductions for the prepaid interest and impose hefty anti-avoidance penalties. Sportingly, the ATO will apply reduced penalties to investors who 'fess up to the ATO before 31 July 1999 and lodge amended income tax returns.

Thousands of high-income earners have just discovered the tooth fairy is a harmless fantasy only if abandoned during childhood. And I don't know about you, gentle reader, but I view these victims with every known emotion except sympathy.

June 30 Follies

The Australian financial year ends on June 30, and each year, in the weeks preceding that ominous deadline, a collective insanity settles over the land.

'How can I save tax', wail the well-heeled.

And in the weeks preceding every June 30, the tax-scheme promoters awaken from their eleven-month hibernation, with briefcases bulging with glossy brochures, and with just one thought on their minds:

Commissions.

The final June 30 of this century saw the usual spate of rural tax shelters – afforestation, tea-trees, vineyards, and so forth. Virtually 100% of annual investments in such products occur in June of each year. In my (almost) three decades in the trenches I have seen just one investor make an economic profit from a rural tax shelter, and he had waited so long for his trees to grow he died just before the harvest.

There were some really bizarre schemes this year as well. How would you like to go into partnership with total strangers, and establish a business cleaning up toxic waste sites? Think of the tax deductions.

But an old classic is hard to kill, and the film tax schemes just won't die. Now, pay attention. I have a great offer to readers of *the Skeptic*: I want to produce a film – a gentle romance, honouring an old and esteemed colleague. I will permit you to market and distribute this film for me. I will advance you an \$80,000 interest free loan to help you get your film marketing and distribution business under way. This loan is only repayable from profits generated from your business – no profits mean no repayments. But you must pay my

associates \$100,000 to act as your agents in your film marketing and distribution business, and they will do all the work for you. The \$100,000 is accordingly tax deductible, and if you are on the highest marginal tax rate of 48.5%, you will save almost \$50,000 in tax.

So your net \$20,000 payment generates a \$50,000 tax refund. Be honest now - you couldn't care less whether my film *Sir Jim R Wallaby - the Skeptic Who Shagged Me* is actually made, or not.

If this scheme worked, it would violate goodness knows how many Laws of Thermodynamics. And in the real world, such schemes are deliberately confronted by our tax legislation and have consistently been struck down by the courts. The scheme promoters would have you believe otherwise.

But an interesting bit of psychology comes into play. The victims want to believe that it really does work. The scheme promoters are happy to show how their structure is different to earlier failed structures (a different coloured ink on the brochure, perhaps), and their victims are so blinded by the prospect of free money from the ATO their common sense evaporates. The pushy salesmen don't have to do a thing - the victims are now immune to any negative advice, and proceed regardless.

Thanks for the \$20,000.

On-line Scams

It comes as no shock to readers of *the Skeptic* to be told the Internet is infested with scams. Following the recent April 1 example of our own Australian Securities and Investments Commission (*the Skeptic* 19:2), the US Federal Trade Commission has established bogus Web sites to highlight these scams.

Unlike the ASIC's campaign, which focused on get-rich-quick scams, the FTC is warning of medical scams. The ArthritCure home page offers a \$19.95 cure for arthritis. Attempts to order the product elicit a 'you have just been scammed' message and detailed advice on how to identify suspect products.

Full marks to the FTC.

Because the FTC has the resources our ASIC must weep over, the FTC has also gone on the attack. A specialist team of FTC staff are constantly trolling the Web, identifying sites which make the usual claims for their magic potions and electronic devices. To date, the operators of 91 Web sites have been charged with false or fraudulent advertising. But the main problem with cyberspace policing is jurisdictional - if the bad guys set themselves up in a country with no consumer protection laws, they can operate with impunity.

The fact that consumer protection authorities are engaging in public education of the need for vigilant scepticism should fill us Skeptics with a warm and fuzzy glow. We were there first.

... Angel hair from p 32

known as 'true' spiders balloon. (Of the other class of spiders, known as 'tarantulas', only a small number are known to do so.)

Also, like many mass phenomena in nature, such as cicadas hatching, coral breeding, insects swarming and so on, spider ballooning is also subject to natural "pulses", meaning that an entire species will undertake a given behaviour at the same time. This explains the huge amount of gossamer produced when the spiders decide to balloon.

In the light of this natural phenomenon of spider ballooning, it seems likely that this is the explanation for the "Angel's Hair" associated with alleged sightings of UFOs, rather than it being an engine by-product. That "Angel's Hair" is most likely spider web is supported by the fact that:

- * the strands are extremely light and fine and disintegrate easily;
- * large numbers of strands are produced;
- * the fibres are of such low density that they will appear to float with no apparent wind;
- * the fibres are produced in huge numbers because of the number of spiders ballooning at the same time.

One must give some credit to the UFOlogist authors above, in that they are prepared to accept that it *might* be a plausible natural phenomenon (ie cobweb), however they then go to extraordinary (and irrelevant) lengths to propose hypothetical explanations for which there seem to be no evidence whatever.

Further reading:

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Encyclopaedia Britannica and creationism Pt II

Ken Smith

Several years ago (*the Skeptic*, 7:2) I wrote an article about a claim which had been made by the Creation Science Foundation, now Answers in Genesis. This gives the background to the title of this article, but it is worth repeating some of the introductory words from the earlier article.

On page 46 of the December 1986 issue of *Creation Ex Nihilo* (9:1) there is a column headed "Old books prove creation was basis of science". Since no name is attached to the item it is presumably by the then editor, John Mackay. [It should be noted that he has since left the organisation and set up his own creationist organisation under the name Creation Research Centre.] The column records the donation to the library of the Creation Science Foundation of a reproduction of the first edition of the *Encyclopaedia Britannica*. The original was published in 1771, and the column goes on:

The entries on science have a strong creation emphasis, as this excerpt from the section on Astronomy will show: 'Whoever imagines they [so many glorious suns] were created only to give a faint glimmering of light to the inhabitants of this globe, must have a very superficial knowledge of astronomy, and a mean opinion of Divine Wisdom; since, by an infinitely less exertion of creating power, the Deity could have given our earth much more light by one single additional mass.'

The earlier article showed that these words had been so taken out of context that they conveyed a most misleading impression about the true nature of the article on "Astronomy". Here some of the other articles on the physical sciences will be discussed briefly - I shall leave the biological articles to someone more qualified. Perhaps some biologist might be encouraged to follow up what lies behind the following two sentences from the article "Botany". I offer these, *gratis*, to our creationist friends, who have always thought that there was something a bit disgusting about the biological sciences, so that they can quote them out of context.

A man would not naturally expect to meet with disgusting strokes of obscenity in a system of botany. But it is a certain fact, that obscenity is the very basis of the Linnaean system.

Creation and the Flood

Two of the most common words to be found in creationist writings are "creation" and "flood". Both these have entries in the *Encyclopaedia*, but they are hardly creationist (in the modern sense of that word) in tone. The article "Creation" reads, in full:

CREATION, the producing something out of nothing, which strictly and properly is the effect of the power of God alone, all other creations being only transformations, or change of shape.

"Something out of nothing" is the sense in which cosmologists use the word "creation", as when we read about "the creation of the universe". The formation of human beings out of the dust of the ground is, accord-

ing to the *Encyclopaedia*, only a transformation, *not* creation as used by our creationist friends. In fact the Hebrew verb *yatsar* used in *Genesis* 2:7 for the formation of a human being is the same verb that is used in *Isaiah* 44:9-12 for human beings manufacturing idols. Perhaps our friends at Answers in Genesis should call themselves "Scientific Transformationists".

Under "Flood" we find "See Deluge". Under "Deluge" we have a 14 line entry, which says, in part, "... the most memorable was that called the universal deluge, or Noah's flood, ...". This is a perfectly acceptable statement for 1770s vintage semi-popular writings about science. But have our creationist friends perused and absorbed the final paragraph of this article? It reads:

Many attempts have been made to account for the deluge by means of natural causes: but these attempts have only tended to discredit philosophy and to render their authors ridiculous.

By "Philosophy" we should understand "Natural Philosophy", or Science, to use the modern term. We have been telling them for years that they were being ridiculous in trying to develop scientific causes for the Flood, or looking for scientific evidence of it - maybe they will accept the pronouncement of this book with its "strong creation emphasis".

The article "Deluge" also says "See Ark". This article (which immediately follows a 58 page article "Arithmetick") is just over one page long, and is, in one respect, remarkable. It is the first article I have seen, among those with a bias towards an acceptance of the flood story as recorded in *Genesis* as literally true, which honestly faces up to the problem of feeding and caring for the animals during the year's voyage. How was this done? Well, it appears that modern-day creationists' estimates of the number of animals on board are grossly in error. On page 424 one paragraph reads:

The things contained in it were, besides eight persons of Noah's family, one pair of every species of unclean animals and seven pair of every species of clean animals, with provisions for them all during the whole year. The former appears, at first view, almost infinite; but if we come to a calculation, the number of species of animals will be found much less than is generally imagined, not amounting to an hundred species of quadrupeds, nor to two hundred birds; out of which, in this case, are excepted such animals as can live in the water. Zoologists usually reckon but an hundred and seventy species in all; and bishop [sic] Wilkins shews that only seventy-two of the quadruped kind needed a place in the ark."

Well, that solves one problem! It would be possible for Noah and his family to attend to feeding and looking after 72 pairs of unclean quadrupeds, plus seven pairs each of cattle, sheep and goats. If the women shared the work that would mean that each person was responsible for about twenty animals, not an unreasonable load, though they may have had to work a bit hard. This assumes that the mosquitoes and other insects, as well as the birds, were able to look after themselves - and it seems quite clear that nobody can have swatted either of the mosquitoes, midges, gnats, flies, etc. I don't

know whether Shem, Ham and Japheth were members of a trade union, but I'd want danger money for cleaning out the cage of a pair of Tyrannosaurus (Tyrannosauri?) Rex. Also it would just about be possible to carry enough food for them for a year. But what has happened since then? If there were only 72 "kinds" of quadrupeds wandering around on the earth about 4,500 years ago, there must have been some extremely rapid evolution to get to the number we have around us today. Perhaps our creationist friends could tell us which are the 72 "basic kinds" of quadrupeds, so that zoologists could revise their schemes of classification? Not forgetting the dinosaurs, which were unknown in 1771, but which, we are assured, were on the Ark.

Physical sciences

So much for "creation" and "flood". The physical sciences cover Chemistry, Geology and Physics, in alphabetical order. Various areas which cover several fields, such as geochemistry and geophysics, are modern developments, and we shouldn't expect to find these in a 1771 book. How are the physical sciences treated in the *Encyclopaedia*? We will start with Physics, the oldest of these three.

In those days, and in some of the older English universities today, Physics was (or is) called Natural Philosophy. The entry under this term refers us to separate entries under "Mechanics", "Optics", "Astronomy", "Hydrostatics" and "Pneumatics". The subject of "Thermodynamics", much loved and abused by creationists, was not created - oops, was not developed - until around the middle of the nineteenth century, and so there is no entry for it, which is a pity: it would have been nice to see what "strong creation emphasis" there was on this in such an eminent work. "Astronomy" was covered in the earlier article: the entry, contrary to the claim in *Ex Nihilo*, was found to be quite lacking in a "strong creation emphasis". The entries under the others are just about what would be expected for a 1770 vintage work. "Mechanics" deals with pulleys and gears, and contains instructions for constructing mechanical models of the solar system. "Pneumatics" deals with sound waves, the compressibility of air, and winds. "Hydrostatics" deals largely with water wheels and pumps, and the measurement of specific gravity.

"Optics" covers microscopes, telescopes, the spectrum and rainbows. This article shows that it is unwise to rely on an encyclopaedia for even reasonably up-to-date information on any topic. The only type of lenses discussed are very simple ones. At one point the article mentions the problem of coloured fringes on objects (technically, chromatic aberration), due to light of different wavelengths being refracted by different amounts: the *Encyclopaedia* refers to this as "different refrangibility". This was first overcome by John Dollond, who developed achromatic lenses in England in 1757. So the book is some years out of date in not mentioning these. The same problem also occurs in an item in the 1956 edition, mentioned below, which in fact dates from 1929.

The word "Geology", as it refers to the crust and strata of the earth, appears to have been first used by James Hutton in the 1795 edition of *The Theory of the Earth*. Thus there is no corresponding entry in the *Encyclopaedia*. The article "Fossils" refers us to "Natural History", but there is nothing there about fossils (indi-

cating some lack of coordination about cross-referencing by the editors). What the "strong creation emphasis" on geology was will have to remain a mystery.

Which brings us to Chemistry, and the article on this is quite long (114 pages, plus three fold-out tables), and is also very interesting. Although creationists regularly offer criticisms of various aspects of geology and physics, there are very few articles on chemistry to be found in creationist publications. Here, at last, we have one, in a book with a claimed "strong creation emphasis".

The article is divided into two parts: Part I, Theory of Chemistry, and Part II, Practice of Chemistry. The experimental part (the second part) is fairly standard, though quite antiquated by now. The theoretical part consists of an extensive discussion of various substances, and includes mention of the component parts into which they can be resolved. The brief introduction before the heading "Theory of Chemistry" reads, in part: "... substances in which we can produce no change, and which are incapable of being resolved into others. To these substances we may give the title of principles or elements.". All perfectly up-to date, you say. But the article continues: "Of this kind the principal are earth, water, air, and fire.". Aha! A book with "a strong creation emphasis" accepts the four traditional elements, and does not accept the 100 plus that we now know! It is only fair to add that the book goes on to say: "For although there be reason to think, that these are not the first component parts, or the most simple elements of matter; ..." However it then proceeds to state "If a particle of water be intimately united with a particle of earth, the result will be a new compound, ..."

The authors do show, however, that things have progressed in the field of chemistry since classical times. Following the four sections discussing air, water, earth, and fire (in that order), comes a section, whose title I will hold back for a few sentences. Part of this reads:

Yet the phenomena attending the combustion of inflammable bodies show that they really contain the matter of fire as a constituent principle. By what mechanism then is this fluid, so subtle, [sic] so active, so difficult to confine, so capable of penetrating into every other substance in nature, so fixed as to make a component part of the most solid bodies? It is no easy matter to give a satisfactory answer to this question. ... To this substance, in order to distinguish it from pure and unmix'd fire, the chemists have assigned the peculiar title of the Phlogiston, ...

You can now fill in the title of the section: it is "Of the Phlogiston". So by 1771 we have five "elements", not four. This quotation about phlogiston indicates that by this time there were a number of problems associated with the concept - those who want to pursue this further should consult some book on the history of chemistry. This is perfectly normal in science, and indicates that some new idea is needed. This was provided by Lavoisier (who lost his head - literally - in 1794) only a few years later. He showed that in combustion oxygen was consumed.

We hope that our school children (and my grandchildren) will not be taught "Creation Chemistry" from this book! Of course, our creationist friends may wish not to include this long article in their "strong creation emphasis". In 1986 the Creation Science Foundation did not have on its staff anyone who had postgraduate credentials in chemistry. Now that it has changed its name to Answers in Genesis it has acquired several people with PhD's, including Dr Jonathan Sarfati,

whose PhD is in physical chemistry. It would be extremely interesting if Dr Sarfati let the world know, in the light of the above, whether he supports the idea that all the stuff we see around us is formed out of the four classical elements, plus phlogiston. Perhaps he does not share the views of the author of the *Creation Ex Nihilo* article that "The entries on science have a strong creation emphasis". If so, could he please say so publicly? Otherwise his name will, inevitably, be linked with this erroneous chemistry. The last thing anyone writing in *the Skeptic* wants to do is misrepresent the ideas of someone with a PhD in chemistry.

In none of the articles which come under the aegis of Physical Sciences, apart from "Astronomy", did I notice any reference to "God", or "Creator", or "creation". It seems, from this fairly cursory survey, that the first edition of the *Encyclopaedia Britannica* is a perfectly normal example of 18th century writing, as far as science is concerned.

Many people have looked at quotations creationists have claimed are quotations from modern scientific works. In almost every case, comparison of the "quotation" with the original shows that it has been either taken out of context so as to distort the original meaning, or is incorrect (or both). The same appears to be the case for at least one older work. The claim that "Old books prove creation was the basis of science", as the heading of the column in *Creation Ex Nihilo* reads, appears to be based on wishful thinking and not on evidence. A few references to "the Creator" in one article of a three volume encyclopaedia do not mean that it has a "strong creation emphasis".

Creationists' misguided appeal to the *Encyclopaedia Britannica* to support their case is not confined to just the first edition. In an article "Deception Exposed" (*the Skeptic*, 11:3, 1991) I examined (amongst others) an alleged "quotation" which had been taken from the 1956 edition of the *Encyclopaedia*. The article, in fact, was virtually identical with that in the 1929 edition, so the date gave a misleading impression of the age of the article. Even so a vital part of the context of the "quotation" had been omitted. Including the context showed that the original author was making precisely the opposite point to that which the average reader of *The Revised Quote Book* would deduce.

There are two sentences towards the end of the column in *Creation Ex Nihilo* which indicates that creationists are not very familiar with the scientific literature. "So what's new?" I hear some readers saying. Let me quote those sentences, and then make some suggestions which supporters of Answers in Genesis might like to take up, and help provide the organisation with some much needed resources. The sentences read:

These volumes of Britannica will make a valuable addition to our reference library of old books. If you can help us obtain books published before 1930 relating to creation, the Bible, science or evolution, please let us know as they all help put the lie to the evolutionist claim that creation is not science.

Let me offer some help from my bookshelves. In 1968 Penguin Books republished the first edition of Darwin's *Origin of Species*, and it has remained in print ever since. This would be a good starting point. But if they really want some old books, they could try going to book sales or looking in second-hand bookshops. Some books I have acquired in this way, at a cost rarely exceeding a couple of dollars each, are, listed in no particular order:

Arthur Balfour, *Theism and Humanism*, 1915; A.S. Eddington, *The Mathematical Theory of Relativity*, 1924; J.H. Jeans, *Astronomy and Cosmogony*, 1928; James Ward, *Naturalism and Agnosticism*, 1906; S. Alexander, *Space, Time, and Deity*, 1920; Sir Arthur Eddington, *The Nature of the Physical World*, 1928; General the Right Hon. J.C. Smuts, *Holism and Evolution*, 1926; Thomas H. Huxley, *Science and Christian Tradition*, 1894; Professor J. Arthur Thomson, *The Gospel of Evolution*, 1925; Ernst Haeckel, *The Riddle of the Universe*, 1900; Henri Bergson, *Creative Evolution*, 1912. (I should perhaps add that I have acquired a number of creationist works - though none are pre-1930 - in the same way.) I have other scientific books from this era, but these are a good sample of the type of works referred to by the writer of the article.

But if anyone associated with, or supporting, Answers in Genesis thinks that these books might provide support for creationism they are greatly mistaken. The titles alone of some of them indicate acceptance of the findings of science. The idea that the universe might be only a few thousand years old isn't even mentioned, since this had been abandoned by scientists more than a century before any of the books I have listed were published. Speaking as a mathematician, albeit retired, I would love to see someone on the staff of Answers in Genesis try to expound Eddington's *Mathematical Theory of Relativity* to one of their audiences.

I also have a number of books relating to the Bible published before 1930 in which, I am sure, our friends in Answers to Genesis would be interested. Perhaps they might like to look at the essay "Science and Christian Faith" by Rev Prof James Orr, published in the collected works *The Fundamentals*, published from 1910 to 1915. (The theological ideas expressed in these led to the term "fundamentalism" in the 1920s.) Speaking of the "days" in Genesis he writes:

But things, as in the case of astronomy, are now better understood, and few are disquieted in reading their Bibles because it is made certain that the world is immensely older than the 6,000 years which the older chronology gave it. Geology is felt only to have expanded our ideas of the vastness and marvel of the Creator's operations through the aeons of time during which the world, with its teeming populations of fishes, birds, reptiles, mammals, was preparing for man's abode — when the mountains were being upheaved, the valleys being scooped out, and the veins of precious metals being inlaid into the crust of the earth.

Let me close with something from the pen of the great Reformation theologian, John Calvin, who wrote in the 16th century. His work *Institutes of the Christian Religion* went through a number of editions. In it he lays out the basis of Christian teaching on a whole range of issues. In Book 2, chapter 2, section 16, he writes:

But if the Lord has been pleased to assist us by the work and ministry of the ungodly in physics, dialectics, mathematics, and other similar sciences, let us avail ourselves of it, lest, by neglecting the gifts of God spontaneously offered to us, we be justly punished for our sloth.

I will leave it to others to draw up their own list of "the ungodly", perhaps starting with some people associated with The Australian Skeptics, who have written about some aspects of science. Then our creationist friends (who, I am sure, don't want to "neglect the gifts of God") can be assisted, "by the work and ministry of the ungodly", to gain greater understanding of the fascinating universe in which we all find ourselves. 

Stove applies heat to Popper

Scott Campbell

Anything Goes: Origins of the Cult of Scientific Irrationalism; David Stove, Sydney: Macleay Press, 1998. ISBN 1-876492-01-5. 218 pp. Foreword by Keith Windschuttle. Afterword by James Franklin.

The late David Stove was one Australia's greatest ever intellectuals, writers, polemicists and wits, and one of the two or three best philosophers this country has ever produced. However, because of his distaste for self-promotion, he is not well-known outside a small circle of fans, and what's more, he is actively disliked by many of those in the intelligentsia who know of him. The re-release of this classic book by Sydney's Macleay Press may begin to change all that.

This book was originally released in 1982, when it was called *Popper and After: Four Modern Irrationalists*. It gained a small cult following amongst the more irreverent philosophers of science, but it was also roundly condemned by some of the more pompous for its disrespectful attitude towards twentieth-century philosophy of science, as well as for its polemical style.

What Stove did in the first part of this book (which he entitled 'Philosophy and the English Language: How Irrationalism About Science Is Made Credible'), was to brilliantly and hilariously analyse the means by which four of the most famous philosophers of science of the century, Sir Karl Popper, Thomas Kuhn, Imre Lakatos and Paul Feyerabend, managed to sound convincing whilst putting forward doctrines that entailed that scientific knowledge was impossible. Stove's analysis here is masterful, and is compulsory reading for any student of the philosophy of science. Using impeccable philosophical reasoning, he rescues common-sense from the depths of philosophical nonsense. His wit is breathtaking, quite literally so - during some passages I found myself holding my breath - and his *bon mots* are a constant delight.¹ You can see why Michael Levin wrote 'Reading Stove is like watching Fred Astaire dance. You don't wish you were Fred Astaire, you are just glad to have been around to see him in action.'

Popper reacted to Stove's criticisms by insisting that he is a defender of science. But while Popper himself may well believe in science, the problem is that his philosophy entails that science cannot produce knowledge. According to Popper's view, induction (the making of claims about the unobserved on the basis of what has so far been observed), which is ordinarily supposed to

underpin science, is irrational. Popper holds that scientific knowledge can only proceed from logical deductions made on the basis of basic observation statements. As Popper points out, though, no scientific laws, and no universal statements, such as 'All unimpeded objects above a certain weight fall to the ground', can be deductively derived from basic observation statements. And this is true: no amount of observation of unimpeded objects above a certain weight falling to the ground will *logically* entail the statement 'All unimpeded objects above a certain weight fall to the ground', because there's always the logical possibility that some day one such object won't fall down.

So all science can tell us, says Popper, is which scientific laws and theories have been shown to be *false* (because they have been refuted by at least one basic observation statement). Science provides us with no basis for taking any scientific laws or theories to be true, though. Nor is there any such thing, he thinks, as the evidence providing some support for a scientific theory, and there is certainly no such thing as one theory having more support from the evidence than another theory. Despite these claims, Popper nevertheless thought that we can still say that those scientific theories and claims that have not been refuted are in some sense 'better' than those which have.

However, critics have long pointed out that Popper's 'deductivist' view of science leads to absurdity. Among other fatal problems, it entails that the probability of any scientific statement being true is zero, the same as a self-contradictory statement. It also makes it impossible for scientists to justifiably make perfectly ordinary probability claims, such as that the probability of a new-born baby being female is 50%, claims which Popper admits are scientific. And his belief that his view allows that some scientific theories can be

'better' than others is simply not consistent with other implications of his theory. Popper spent decades trying to worm his way out of such contradictions and absurdities, and Stove is particularly devastating and hilarious in his discussion of the illegitimate methods Popper uses here.²

Many philosophers of science since the 1950s were schooled in Popperism. Many of them gradually became aware of the impossibility of scientific knowledge on the Popperian model. You'd think that this would have resulted in them simply throwing Popper out as a bad mistake.³ What in fact happened, though, was that

Stove is particularly devastating and hilarious in his discussion of the illegitimate methods Popper uses

they either became some sort of relativist, like Kuhn, or they resorted to even more desperate methods to patch up Popper's views, like Lakatos, or they become 'epistemological anarchists' like Feyerabend, who claimed that science was just another myth among many. Such views are still the orthodoxy in philosophy of science.⁴

Part of the value of Stove's work in the first part of *Anything Goes* is that he identifies the linguistic devices which are used to disguise their absurdity. One of the simplest such devices was to place words like 'knowledge', 'discovery', 'fact', 'prove', 'explanation', 'confirm', 'objective' and 'truth' in scare quotes. A Popperian, for example, might say that through science we have come to 'know' that the 'law' of gravity is a 'fact'. Popper's philosophy, though, entails that we do not and cannot possibly know any such thing. But the presence of the words 'know' and 'fact' (despite the fact that they are in scare quotes), deflects attention away from this fact.⁵ Stove points out, though, that once the implications of Popper's views are presented non-evasively, no-one will take them seriously for a moment, as they are clearly ridiculous.

David Papineau, a leading philosopher of science, has written, 'Stove has got Sir Karl Popper exactly right... *Popper and After* will serve as an excellent antidote for the many philosophical innocents who are still in danger of being bewitched by Popper'.

In the second half of *Anything Goes* (which Stove entitled 'How Irrationalism About Science Began'), Stove traces the origins of such views back, through Popper, to Hume's famous argument to show that induction is circular. Stove closely analyses this argument, and shows that it does not support the view that induction is circular and irrational.⁶ This part is aimed more at those who have some background in philosophy, but it's an extremely lucid piece of writing nonetheless, as well as being a sublime and important piece of philosophical analysis.

Anyway, the book is worth buying for the first part alone, which can be read by any non-philosopher with a passing acquaintance of Popper *et al.*

Stove also has some other classic books that I highly recommend, and which are readily accessible to non-philosophers. In *The Plato Cult and Other Philosophical Follies* (Oxford: Blackwell, 1991), he sticks the boot into the persistent tendency of certain types of philosophers over the ages (especially those with religious leanings) to deny the reality of the external physical world. This is again done in his brilliantly witty and inimitable style, and in addition contains valuable and unique arguments against philosophical idealism. It also displays his vast knowledge of 19th century writings.

Darwinian Fairytales (Aldershot: Avebury Press, 1995) is one of the few anti-Darwinian books that is worth reading. When I say 'anti-Darwinian', though, I should stress that Stove, who admired Darwin greatly, does not deny that natural selection is overwhelmingly likely to be the true explanation of our origins. What he mainly

argues against in this book are the claims made about human behaviour by ultra-Darwinists (one of the more distinguished contributors to *the Skeptic*, Richard Dawkins, gets the Stove treatment here). He also argues against simplistic Darwinian analyses of human populations (Julian Simon has made similar points in recent times), and he points out serious deficiencies in W. D. Hamilton's influential 'inclusive fitness' theory.

Cricket versus Republicanism and Other Essays (ed. J. Franklin & R. J. Stove, Sydney: Quakers Hill Press, 1995) is a collection of Stove's essays on various topics. Stove is very unusual amongst modern philosophers in that he can write well on non-philosophical topics. But to put it like this is to massively understate the case. Stove is one of the greatest essayists this country has ever produced, and perhaps one of the best essayists of the century. It is these essays, though, that have made him so unfashionable, especially in academic circles, because

of his conservative political views, and his witty assault on all that the average modern academic holds dear. This is not a book that will be found on 'Recommended reading' lists in sociology departments. Even an admirer like myself can find plenty to disagree with here.⁷ (But one could disagree with an awful lot of what he says here, while still agreeing with most of what he says in his other books, as some people I know do.) His arguments are so well done, though, that even when you disagree with him you can't just dismiss what he says out of hand.

A Stove reader will be available from around August 1999, called *Against the Idols of the Age* (Transaction Press: New Jersey). This is being

prepared by Roger Kimball, author of *Tenured Radicals*. Kimball discovered Stove's writings a few years ago, and then raved about him in *The New Criterion* (March 1997).

Footnotes:

1. Stove's deadly 'Help To Young Authors' section, in which he demonstrates how to rewrite the sentence 'Cook discovered Cook Strait' in the manner of Popper, Lakatos, Kuhn and Feyerabend, has become widely distributed around various e-mail communities.
2. Despite these problems, many scientists at the time (as well as many amateurs of the philosophy of science) accepted Popper's view, and many still do, although clearly almost all of them are unaware of its full implications.
3. Which is not to say that all Popper's claims were misguided. For example, one could well agree with him that theories which no possible evidence could prove false are unscientific.
4. Worse still, versions of Kuhn's and Feyerabend's views have been taken up, with disastrous results, in radical sociology of science, and are taught as gospel in many humanity departments in this country and others.
5. Sometimes, though, these philosophers did not even bother with the scare quotes, which made their claims blatantly contradictory.
6. Some philosophers would differ with Stove's interpretation of this argument, but Stove has arguments in his book *The Rationality of Induction* - one of the best books ever written on the topic - which allow the inductivist to show that any such reinterpretation of Hume will not show that induction is circular. (This book is probably too specialist for most non-philosophers, though.)
7. Stove has an unexpected soft spot for Immanuel Velikovsky. While he recognizes that Velikovsky's followers are often cranks and people from what he calls the 'anti-fluoride belt', he thinks Velikovsky was dismissed far too summarily by the scientists of the time.



Popper proponent pots back

Rafe Champion

What is this thing called Science? A F Chalmers; University of Queensland Press, revised edition 1999. 266 + xvii.

Several generations of science students in New South Wales risked permanent spinal deformity by carrying the massive "Messell" science texts to school. In addition to cricked backs, it seems that Harry Messell attempted to implant an equally crabbed view on the way that science works. The text advised that "Science advances in a definite pattern. First and foremost scientists must make observations. These observations must be careful and accurate; and the results of more and more observations accumulate."

The students and their posture have been emancipated from the Messell text by the educational powers that be, and Alan Chalmers, following Popper and others, has attempted to do the same for their attitudes to the role of facts in the scientific enterprise. At the same time, if students learn all that Chalmers has to teach, they should be immune to the sophistry of the creation 'scientists' and to the siren song of the dreaded post-modernists and deconstructionists who offer flim flam in place of solid analysis in the history and philosophy of science.

Alan Chalmers wrote this book (first published in 1976) because there was no suitable introductory text for undergraduate studies in the history and philosophy of science. It became something of a publishing phenomenon, being translated into numerous languages, with regular reprints and a revised edition in 1981. This permitted the author to afford some of the affectations of the country squire, including "Tim Fisher" hats, as depicted on the back cover of this second revised edition.

Chalmers arrived in Sydney in 1971 as a more or less orthodox Popperian but has since become very much his own man and has landed some shrewd blows upon his old master. The preliminary chapters are devoted to a close scrutiny and demolition of the old orthodoxy in the pre-Popperian philosophy of science, an orthodoxy still nurtured by admirers of the late David Stove. This book appears hot on the heels of the re-launch of Stove's book attacking Popper and other alleged irrationalists. *Anything Goes* is supposed to be a weapon in the battle against the barbarians of deconstructionism who are breaking out of the schools of literary criticism and cultural studies to threaten the humanities at large, and even journal-

ism. With some justification this is regarded as a threat to western civilisation as we know it, but if Chalmers and Popper are on the right track, then turning to Stove and the inductivists for help is like fighting fire with petrol. It can be argued that the long domination of the logical positivists in the philosophy of science created such a mess (and a boring mess to boot) that many students were driven into the sociology of science or to the more radical camp of the deconstructionists.

Chalmers notes the common belief that the authority of science depends on the way that it "is derived from the facts". However, as many research students discover when they turn from the bench to start writing their results, it is very misleading to hope that accumulated observations (*a la* Messell) will turn into general principles or theories (or a thesis). The facts turned up by "nature study" and collectors are virtually worthless unless they are handled by someone like Charles Darwin, who tirelessly and imaginatively sought explanations for the forms and varieties of organisms that he encountered. The facts need to be located in a theoretical framework, and it is general theories which give science its explanatory and predictive power.

Still, scientific theories are supposed to be based on facts and confirmed by facts, and for a long time the official scientific method was an alleged process of induction, whereby scientific knowledge starts with the unbiased observation of the regularities which exist in the world around us and is finally warranted or verified by inductive proof. Chalmers explains with meticulous care how and why inductive verification and warranting does not work. Moreover he explains that it is not necessary to account for the growth or rationality of scientific knowledge.

One of the problems with the observational origin of theories is the abstract nature of advanced scientific theories. Electrons, wave currents and force fields are simply not accessible to observation, nor are the principles of natural selection or the laws of supply and demand. Equally embarrassing is the logical problem of induction. However many black ravens you observe, there is no way to prove that all ravens (in the universe) are black. Popper is probably the arch-enemy of induction in recent times, though it was all said by Duhem at the turn of the century and by Hume a long time before that.

... if Chalmers and Popper are on the right track, then turning to Stove and the inductivists for help is like fighting fire with petrol.

Popper's contribution to advance the debate was a revamped version of the hypothetico-deductive method foreshadowed by Jevons, Whewell, Pierce and the French physiologist Bernard. Knowledge advances by a problem-oriented process of conjecture, followed by rigorous testing of tentative solutions. Then we select the best among the competing theories by its ability to survive the process of testing. Falsified theories need not be discarded because they may stage a revival, they may have instrumental value and they may persist as components of a larger structure. This doctrine was unfortunately labelled "falsificationism" because it was advanced in the 1930s as a rejoinder to the logical positivists who wanted to use factual verification as a criterion of meaning. The label was unfortunate because when difficulties emerged with falsification, they were used as the rationale to bench Popper from the game in the 1970s, before his theory of metaphysical research programs was printed in *Quantum Theory and the Schism in Physics* (1982). This work was available in manuscript form to Popper's colleagues, including Lakatos, in the 1950s.

With falsification revealed as a problematic matter, Chalmers proceeds to examine the treatment of theories as structures by way of Kuhn's paradigms and the "methodology of scientific research programmes" proposed by Popper's junior colleague, Lakatos. Chalmers identifies the profound ambiguity of Kuhn's thinking; on one hand Kuhn insists that there is evolutionary progress in science, on the other it is hard to reconcile this view with the 'gestalt switching' process that is supposed to occur as people move from one paradigm to the next. Similarly he finds that there is no satisfactory guide to the selection of theories to be protected from the rigours of criticism in the hard core of the Lakatosian research program. The radical views of Feyerabend are carefully dissected and Chalmers concedes that there are probably no universal and timeless standards in the philosophy of science. However this is not a concession that "anything goes" because it simply mirrors the situation in science itself.

If we have a conception of science as an open-ended [unended?] quest to improve our knowledge, then why cannot there be room for us to improve our methods and adapt and refine our standards in the light of what we learn" (page 162),

Chalmers illustrates this with a beautiful account of the arguments used by Galileo to convince his contemporaries that the telescope might legitimately be used to augment the evidence of the naked eye.

This edition has new material treating two interesting developments that have attracted attention in recent years. One is a form of Bayesian probability theory. This starts from the recognition that the long running program of the positivists to pin objective probabilities onto theories is a dead duck (or perhaps a dead raven). This was in works by Carnap and Hempel which for David Stove "represent far more progress, in an area of the first intellectual importance, than the entire history of the human race can show before" (*Anything Goes*, page 168).

The Bayesians use information about the subjective assessment of rival theories by the scientific commu-

nity, add the most recent and relevant information that is available and then employ a formula to calculate revised probabilities for the rivals. This approach has huge attraction for people with a numerical turn of mind but there are many complications to work out before its claims can be taken seriously.

The other is the 'new experimentalism'. In some ways it is not all that new because it was stated in a rudimentary form by Dr Cheesman in his Chemistry I lectures at the University of Tasmania in the mid 1960s. (He was notorious on the campus for his pioneering studies in human olfaction. His assistants would accost students in the vicinity of the chemistry department and offer boiled sweets in return for poking their noses over a row of test tubes to record if they could detect any smell). After walking us through the evolution of ideas on the structure of the atom, past the friendly and helpful solar system atom to the rather darker and stranger quantum atom he pointed out that all these theories may come and go but some things do not change. Mix chemical 'a' with chemical 'b' and you obtain a blue precipitate. Place various metals in the Bunsen flame and you will see their characteristic colours. The dehydrated salts of this particular group turn green when water is added. And so on.

Alan Chalmers explains how the role of experimentation has been rehabilitated in a very impressive fashion by recent writers who convincingly argue that "experimentation has a life of its own" (due to the reproducibility of certain types of results and phenomena) against those who celebrate the primacy of theory and relegate the experimental side of science to a secondary role. This has two benefits for people who have a realist view of the world (it is actually out there, it is not a figment of our imagination) and who consider that the progress in science consists of better explanatory theories. The new experimentalism can be used to support the realist view of the world (by demonstrating our capacity to manipulate it) and it also provides the kind of observational base that is required to make testing effective, contra the critics who say "if every damn thing is up for grabs, how can you have a convincing refutation any more than a convincing verification?"

This is a book that can be recommended practically without reservation for anyone who wants to obtain a firmer grasp of one of the most important yet simultaneously least understood developments of modern times. That is, the spectacular successes of scientific research. It is just about in the category of books that need to be bought two at a time, one to keep and one to lend. The writing is clear and unpretentious, and it is packed with episodes from the history of science, so that there is a great deal to be learned in addition to the philosophical content. The only reservation that I can offer is the speculation that Popper's theory of metaphysical research programmes may have something to offer in coming to grips with untestable ideas that are highly influential in the scientific enterprise, but were banned from discussion in the philosophy of science by the anti-metaphysical bias of positivists from Hume onwards.



Shlain on language

Mark Newbrook

Comment on the linguistic discussion in:

The Alphabet Versus The Goddess: The Conflict Between Word And Image, Shlain L. (1998) Viking (Penguin), New York etc.

Leonard Shlain is a surgeon based in San Francisco who has written widely outside his field and in this book proposes a dramatic reinterpretation of human history. In short, his thesis is that the development of literacy, and in particular the invention of alphabetic writing, reinforced the brain's 'masculine' left hemisphere at the expense of the 'feminine' right, upset the socio-psychological balance between the sexes and led to a period of one-sidedly 'linear' thinking and anti-female patriarchal institutions - which persists to the present day. Many of the major cultural patterns and changes of the last few thousand years are, Shlain maintains, to be explained in these terms. Naturally, he would like to see this imbalance corrected.

Shlain cites certain earlier writers such as McLuhan and Logan as foreshadowing his views, and their views are indeed similar to his in some respects; but it is not at all clear that their positions are correct in any sufficiently strong or specific sense, and I will not comment on them here.

I stress that I am not a psychologist or neurologist; I am not equipped to comment critically on the specifically psychological or neurological aspects of Shlain's work (though these have already been criticised by reviewers, including both some who are well qualified and sober and others who are not necessarily either of these and who clearly have their own ideological axes to grind). As a linguist, however, I can comment on his use of my own discipline. It must be said that Shlain does sometimes provide accurate (brief) accounts of aspects of writing systems (eg. of the Egyptian system, on p 53). But much of his other discussion of language and writing is badly confused, and some is simply wrong. Because such issues are very central in his theory, these errors are very damaging indeed.

Despite these major shortcomings, the book has received some highly positive web-site reviews, mainly (it seems) from readers untutored in linguistics. I myself hope here to correct this rather less epoch-making imbalance.

The main linguistic errors in this book include:

1. Shlain does not distinguish adequately between **languages** (in their spoken forms or considered generally) and the **writing systems** used to represent them (this is a common problem for non-linguists). One very obvious instance of this is provided by his very strange discussion of the mutual non-intelligibility of pairs of European languages such as German and Portuguese on p 182 (Shlain blames alphabetic writing for this, but such languages are, naturally, mutually unintelligible

in speech and equally naturally remain so in writing). Again, on p 51 he asserts, ludicrously, that grammar *per se* (as opposed to the specific grammar of an imposed standard variety) is especially difficult in the written mode (it is the written mode itself which, as a recent invention, comes much less naturally than speech to children); and he subsequently claims (p 52) that grammar *per se*, like writing and especially alphabetic writing, is 'unique to the left brain'. His view of what counts as grammar seems restricted, dated and folk-linguistic. On p 182, in a similar vein, he asserts that 'written Chinese has...no parts of speech, and none of the complex rules of grammar typical of Western languages'. This is utter nonsense. Like spoken Chinese - for such matters are, in general terms, neutral between speech and writing - written Chinese manifests a fully articulated grammar, which is different from that of European languages but is still complex and involves distinctions between 'parts of speech'. These features are, of course, still present if Chinese is written alphabetically or in any other way. But if Shlain **were** right, his praise of Chinese would be valid regardless of mode (speech or writing) or script-type.

2. Shlain does not always distinguish adequately between **alphabets** and writing systems more generally. For instance, some of the negative consequences he sees as arising from the use of alphabets would, if he were right, come about even if non-alphabetic writing systems were used. Specific instances of this error include the passage on p 65 where Shlain links literacy and attitudes to religion (the importance in this context of alphabetic writing specifically is not consistently emphasised and is less than fully supported).

Then, in his strange discussion of German and Portuguese on p 182 (see also above), Shlain ignores the obvious facts that the use of any language-specific script would have the same consequences for intelligibility, while language-neutral ideograms or pictograms could not represent the whole range of texts produced in a natural language.

It is true that Chinese logographic script **can** be used to represent a range of varieties, many of which are mutually unintelligible in speech (though the intention is normally to represent Standard Chinese usage, specifically, at any points where the varieties differ); but these varieties are nevertheless unusually similar in structural terms and are thought of as 'dialects of the same language' (so this is a special case). See also 9 below for some further striking instances of this confusion.

3. Shlain focuses on the contrast between **alphabets** and **logographic** ('ideographic') scripts; he largely ignores the important intermediate category of **syllabary**. Neither this word nor *syllable* appears in his index. Few

reviewers have noticed this omission; syllabaries are not very familiar in 'the West'.

4. Shlain generally refers to **logograms** (eg, Chinese characters) by the dated and inaccurate term *ideogram* (ditto for the associated adjectives in *-graphic*). Ideograms do exist, but are language-neutral and hence a) do not usually combine to form entire scripts and b) arise mainly in situations where literacy has not yet emerged or where communication in 'writing' between many groups not sharing a written language is needed (eg, on international road-signs).

Chinese characters and Egyptian hieroglyphs are, of course, language-specific; even those which still display their pictographic origins represent words of Chinese or of Egyptian, not language-neutral concepts (assuming that these latter still exist for humans, which not all scholars would accept). Shlain's account of how 'ideograms' work is also confusing; on pp 182-186 his emphasis fluctuates across various alleged features of the Chinese script (all of which are in fact partially valid). (Incidentally, Chinese does not have to be written vertically. The ductus of scripts is often flexible, especially before usage is standardised, and Shlain makes rather too much of this common but far from universal practice, descending into nonsense on pp 182-183 where he compares the organisation of normal running text with that of special documents such as telephone directories.)

And - although he presents (p 184) what appears to be sound evidence that the process of acquisition of literacy differs for learners of logographic scripts on the one hand and alphabets on the other - his claims about the significance of differences of script-type seem exaggerated. Perhaps they are partly based on a mistaken **interpretation** of logographic systems as genuinely ideographic and thus less closely bound to specific languages (though it is not clear that this would have the upshots desired by Shlain).

5. Shlain confuses the notions of *phoneme* and *phone* ('speech-sound'), most blatantly on p 182 where he makes the ludicrous statement that the human voice can easily articulate only 43 distinctive 'sounds or phonemes'. The human voice can articulate (and the human ear can distinguish) very many more distinctive sounds than this; the number is so great that no precise figure can be given. Even in one accent of one language there may be many more distinctive sounds than this. Shlain has misunderstood and garbled a statement about the **phonology of English** in particular.

The sounds of a typical specific accent of English can be analysed into a phoneme system of around 40-45 phonemes, defined in structural terms. (The spelling system of an alphabetically-written language often works roughly on the basis of one letter per phoneme.) Each of these phonemes may have several phonetically

distinctive **allophones** (phones analysed as representing the same phoneme); this yields the much larger figures indicated above. Different accents have slightly different phoneme systems; and different languages typically have utterly different phoneme systems, with different ranges of phones, different groupings of common phones into phonemes and different total numbers of phonemes ranging from around 12 to over 100.

6. An associated error involves the fact that Shlain's definition of the very word *alphabet* (p 65) is utterly wrong. This hardly inspires confidence. Shlain defines an alphabet as 'any form of writing that contains fewer than thirty signs'. He gives no source for this, hardly surprisingly given the magnitude of his error. An alphabet is, in fact, a writing system in which each sign/symbol (letter) corresponds approximately with one phoneme - in contrast with a syllabary, where each symbol represents a syllable (typically consisting of two or more phonemes), or with a logographic system, where each symbol represents a morpheme or an entire word. This is a structural definition and says nothing about the number of symbols in an alphabet.

It is true that languages always have far fewer phonemes than syllables and far fewer syllables than morphemes (tens, hundreds, thousands respectively); but an alphabet used to write a language with 120 phonemes would need around 120 letters, and (given that most English accents have 40-45 phonemes) there would be 40-45 letters in a more consistent alphabetic spelling system for English than the rather haphazard one which the complex history of the language has bequeathed to us. Indeed, Russian is written with 32 letters; would Shlain deny the name *alphabet* to that writing system because 32 is greater than 30?

7. Shlain displays a limited awareness of the range of views among linguists. Like many amateur linguists, he seems to be familiar only with a Chomskyan view of language acquisition (on p 51 he presents such a view as more or less uncontroversial). This narrow focus has various upshots.

8. Shlain's accounts of the origin and early development of language and society (eg, pp 5-7, 13-16) are highly speculative, inadequately referenced and at times overtly partisan, relying excessively on traditional beliefs and endorsing (rather uncritically) the currently 'trendy' and ideologically-charged theories of early matriarchal paradises which were later overthrown by literate males. It should be made clear that these and other 'fringe' historical theories embraced uncritically by Shlain are not very well supported by the evidence.

9. In a similar vein, Shlain's claims about links between writing systems (or other aspects of language) and cultural patterns are often implausible and/or inadequately defended. His thesis would thus require more persuasive support even if his linguistic state-

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ments were more accurate. For instance, he suggests (p 183) that the absence of specific tense- and mood-marked verb forms from Chinese (which is itself a somewhat oversimplified formulation of the facts) explains why the Chinese did not traditionally count time in weeks (perhaps because they did not or could not think of time as passing; but in that case how did they count in months?).

He also seems to claim (pp 68-71) that the Phoenicians' development of their alphabet - the ancestor of the Greek and the Roman alphabets - was somehow associated with the alleged barbarity and uncultured character of their civilisation. More generally, he repeatedly draws unsubstantiated links of this kind between the adoption of alphabetic scripts, on the one hand, and various historical events and states (or indeed unverified legends about events) which he regards as unfortunate, on the other.

These latter include an excessive focus on speculative philosophy, logic and abstract science at the expense of 'holistic' appreciation of the world (p 185), political turmoil (*ibid.*), etc, etc - and, crucially, the alleged decline in the status of women and women's thought (*passim*; eg, p 46 on Akkad's conquest of Sumer, p 202 on the early stages of several major religious philosophies). Little or no evidence is given that these conclusions are derived from careful surveys of world history carried out without presupposing the validity of Shlain's thesis, or that counter-arguments and contrary evidence have been fairly taken into account.

Even where the relevant events coincide in time, it is far from clear that the adoption of an alphabet was the cause of the relevant non-linguistic events, rather than the reverse scenario or mere coincidence. In contrast, it is all too clear from Shlain's work (as from many earlier 'fringe' proposals of this nature) that the broad sweep of historical events and states can easily be interpreted by those so motivated as conforming with any one of a wide range of general meta-historical theses and schemata, with no danger of empirical disconfirmation (several web-site reviewers enthusiastically report noticing many supporting instances only after reading the book!).

In some cases, however, one might be able to adduce more plausible, specific explanations for developments, or indeed to query the first-level interpretations of events. Incidentally, Shlain also draws such links between unwelcome historical events and the adoption of writing *per se*, which hardly suits his case. One such case is on p 3, where he endorses an earlier writer's association of writing with the institution of slavery; and some of his chronology seems to reflect the origin of writing rather than that of alphabets. However, we have already seen that he does not adequately distinguish writing in general from alphabets in particular (see 2 above).

In conclusion: in my view, a writer with Shlain's 'knowledge' of linguistics has no business developing or advocating theories about language - whatever his strengths may be in other areas (and note that in other respects too his claims are disputed).



Notice

World Skeptics Convention Sydney

November 10-12, 2000

University of Sydney

Australian Skeptics is pleased to announce that planning is now well under way for the World Skeptics Convention to be held in Sydney in November 2000.

The University of Sydney has been selected as the venue and we expect to field a distinguished list of speakers from the USA, Europe and Asia, as well as from around Australia.

Call for papers

For those interested in participating in the speaking programme, this is the first call for papers to be presented at the Convention. Please send a summary to the Skeptics PO Box.

Themes for the various sessions will be shortly be under discussion with our co-sponsors, CSICOP. One of the main topics will certainly cover the impact of alternative health practices and another will take a light-hearted look at the predictions of doom and destruction that have been predicted to have occurred before then.

We invite input from our readers as to the topics they would like to see discussed at the convention and suggestions as to speakers who might be invited to participate. We are also interested to hear what any ideas you might have on the overall theme for the event and your opinions and ideas about the suggested Convention logo shown below. It is in an overall gold colour scheme.



cally referencing, sentences which constitute a paradox. (Our conversation then digressed to Toilet Tennis ["To play toilet tennis see other wall" - "To play toilet tennis see other wall"] which is apparently common in Western Australian schools and colleges but is not so relevant to the real issue here.)

My point is that Lawrence Trevanion is not correctly describing the English language I speak when he says "Sentences cannot refer to themselves" and I think he is wrong in the case of any other natural language. I would have thought also that *if* it is true that "mathematical sets cannot contain themselves" this is only so because someone has *defined* the term 'set' to function this way so that "X" which is the set of all sets, is *not allowed* to be a member of itself. That is what mathematics and formal logic is about after all: defining terms so they can be used consistently.

Paradox in nature. As to the existence of paradox in the world I inhabit, I have come to the conclusion that Susan Blackmore is correct in asserting that consciousness, ie the subjective impression of being here now, is what it is like to be the model of self-in-the-world which a particular brain has created. As such our experience of being here now is *essentially* paradoxical because, whilst we assume and act as if "I" am really touching, tasting, seeing, "it" the experience is actually my brain's representation of my bum being linked to my brain's representation of the chair, or the representation of the computer screen being linked to the representation of me looking, and so forth. In other words all of this experience is *constructed* within the brain and consciousness as such does not "do" anything.

Consciousness is what it is like to be a navigational scratch pad, a kind of trial balance and trading statement which is updated every twentieth of a second or so. This wonderfully succinct theory implies that it is *only* because the brain has a model of "self", ie it really does contain a self-referencing system, that there is any *subjective* impression at all. Note that the brain's model of "self" is not a model of a brain but of a body-image and social "self".

The Buddha, Derek Parfit, and Susan Blackmore (and many others unknown to me most likely) have all said that the "person" I normally believe myself to be is an illusion. I believe they are right up to a point but I prefer calling our experience paradoxical because there really is a social self and we depend absolutely (oops! L.T. won't like that) on each of us acknowledging the selfhood or personality of others. It is just that for each of us at any given moment, we are ascribing our experience - the current model of "self" - to the whole of "self" and this is a mistake. I like to call this the primary paradox. For most of the time it doesn't matter too much, in fact it works so well it looks to me like we could not have evolved otherwise and neither could any ET elsewhere in our galaxy, but the issue becomes important when we consider ethics, moral responsibility and freedom of choice. The Primary Paradox Writ Large.

At the risk of boring you if you have heard it all before, I think it worth pointing out that we humans live by means of a description of the world. This is another way of expressing the ideas in the previous two paragraphs. The brain of each of us is creating within itself

an ever expanding set of representations of people, things and their interrelationships. It is these representations which constitute the "mind" that L.T. seems not to want to talk about. I like to call these representations constructs but this does *not* make me a postmodernist, nor does any of the following. Perceiving, believing, knowing, remembering, and doing are what occurs when constructs are activated or reactivated; we deal with our world by means of the model which is most definitely *in* our own brain.

We acquire most of our constructs through imitation or interaction with other people and these (which are now called "memes") constitute our culture. These constructs which we share in common enable us all to "see" and communicate about the same things. Different cultures may have radically different descriptions of the world but the people of each culture, by and large, find their own world view to be self consistent and adequate, unless they are indigenous sceptics. I am *not* saying that all cultural or class world views are equally good for the people who inhabit them; slavery, holy wars, genocide, female genital mutilation, the darkness of fearful superstition all come to mind as potent examples of horrible situations that the participants would have avoided if they had known how. It is ludicrous to assert that all "ethnic" constructions of the world are equally good for their inhabitants: a tame example is where an indigenous people live in fear of echoes which they believe to be the voices of ghosts and evil spirits, a more terrible example is the vain belief of people who call themselves a "master race". It is just that "the world" is what we believe it to be *until we discover otherwise*. I think of this as the paradox of ethnicity - the projections of a culture onto a potentially infinite universe. Subjectively it is like the primary paradox writ large. The postmodernists seem to get to this point but then fall into industrial strength arm waving.

I understand that postmodernism asserts there can be no privileged view of the world, i.e. no description of reality which is better than any other. This is clearly wrong. We have to construct the world in order to apprehend it, but our constructions need a "reality check". Our natural tendency maybe to prefer confirmation from our peers or quiet accommodation of our own views to those of the majority. This can allow us an easier and possibly painless existence for most of the time - a holiday in the comfort zone so to speak. But there are times when the more difficult or dangerous process of finding out if the majority view really fits the best facts available is the only way for an individual or her society to progress.

Just because people do not realise that they are living through a model or description (which is our usual state) does not mean they and their children are not suffering unnecessarily. I mean, for example, there is a world view that encompasses the practise of exhorting young men or even children to go to war for the glory of "God" or "Allah" in the belief that they will be conscious in a privileged paradise after the death of their bodies. In contrast to this there is another world view that says, on the basis of having looked really hard for it, there is *no* worthy evidence to support a "life after death" hypothesis so any compassionate person should encourage her/his fellows to build the most quality they

can into this transient existence that we briefly share and this most definitely requires effort towards non-violent resolution of conflict.

Are the postmodernists really trying to tell us that the first view has the same factual basis - let alone moral standing - as the second one? The antidote for each of our ethnocentric views of the world is precisely the application of scientific method because so much of what challenges us comes down to questions of fact. The scientific method allows us to discover the best, i.e. truest, descriptions of the world through a process of checking predictions against actual outcomes - seeking truth from facts as an old Chinese saying has it. The health, prosperity and happiness of billions of people on this planet depend on us (all of us) adopting the most effective and efficient descriptions of the natural and human worlds and adjusting our habits and life styles appropriately. Ensuring that the marvellous discoveries of science benefit everyone and not just a privileged few is a deeper problem. I consider the practice of compassion, democracy and ethics to be as important as science in achieving this. I hope to write more about this in future. If anyone can prove I am wrong in any of this I will be happy to hear from them at mpeaty@webace.com.au

Mark Peaty
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Another view

I would like to comment on some of the statements made by Lawrence Trevanion in his article "Post post-modernist relativism".

First, I am not sure what he means by "the absolute number". I never heard this term in four years of university mathematics. Nor is it clear to me what it could mean to say that infinity is the equivalent of it. Trevanion is a little confused about Cantor's system. There is no highest finite number, nor any highest infinite quantity. I am not sure what he means by "if an infinity can be completed". Perhaps he is concerned about the fact that infinite quantities are not found in the real world. This is true, but it makes no difference to the mathematics.

His arguments about self-reference are faulty. "A scratches B" doesn't have to mean "A's fingertip touches B's." It just means that A's fingertip touches some part of B's body. So likewise, if I say that A scratches A, it doesn't have to mean that A's fingertip touches itself. It just has to touch some part of A's body.

Trevanion also believes that no sentence can refer to itself because "it must contain itself plus more words that refer back to itself." However, a sentence does not have to contain what it refers to. The sentence "Elephants are grey" does not contain any actual elephants but does refer to them. Likewise, a sentence can refer to a sentence without containing it, and that sentence can be itself.

Principia Mathematica and Goedel's Incompleteness Theorem are very difficult works. The latter was discussed only briefly in my maths course, in the optional

third year topic "Mathematical Logic". Most maths or philosophy undergraduates would probably not study them at all. Yet Trevanion, with "no certified specialty", believes he understands these works well enough to be able to dismiss them as "the most awful drivel"? Trevanion "boasts" of having denied the possibility of Fermat's Last Theorem being undecidable. Well, he was right about that. However, it's not much of a boast, as Fermat's Theorem could not have turned out to be undecidable. The explanation for this is relatively simple: Fermat's Theorem says that a certain type of mathematical equation does not exist. It could not be undecidable because if it were, it would follow that there could not exist any equation of that sort, since finding such an equation would make the Theorem false and hence decidable. But if such an equation does not exist, then the Theorem is true, and hence decidable.

I read the postmodernist reviews by Ken Smith and James Gerrard (19:2), and share their opinions. There are sure to be some female mathematicians out there who have studied fluid behaviour, and it would be interesting to know what they make of the quotation from Katherine Hayles, and whether their own contributions to that field have been any less "masculinist" than those of their male colleagues.

Self-reference

There were a number of points made in the article 'Post Postmodern Relativism', which appeared to me to be questionable, and I would like to challenge one of them.

I've read Kurt Goedel's proof *On Formally Undecidable Propositions of Principia Mathematica and Related Systems* (If you want a copy, it is published by Dover, ISBN 0-486-66980-7, 1992). I've been through the proof carefully, and I am satisfied that it is a well-argued, well-secured piece of mathematical truth. I am qualified to judge this, because I have an honours degree in Mathematics.

By contrast, Lawrence Trevanion seems to have merely asserted several times, in a few different ways, that self-reference is impossible. I was not convinced, and I would like to see some proof. Proof is, after all, a mathematician's only stock in trade. So permit me some scepticism of his scepticism.

I suppose there are two kinds of scepticism. The first is where ideas are criticised because you can prove them to be incorrect, or at least, you cannot prove them to be correct, and they look like good candidates for Occam's Razor. The second kind of scepticism is where ideas are criticised because they are irritating, uncomfortable, or just plain weird. Obviously, this second sort of scepticism is not always a reliable indicator of truth.

I suspect that 'Post Postmodernist Relativism' spent at least some of its time in this second sort of scepticism.

Ben Morphet
Drummoyne NSW

Astrology

Only God can predict the future better than...

Fred Thornett

The Reverend Supreme Pontificator of the Tasmanian Order of the Mystic Umbilicus, His Serene Eminence Fred Thornett, was greatly inspired by the research of the esteemed Doctor James Marchant PhD into the mysteries of the Great Pyramid of Tiwkuf. His Eminence has spent long minutes of in-depth study to master the ancient art, science and prognostications of Astrology. Resulting from this research, the Australian Skeptics in Tasmania Inc is able to bring you, absolutely free, that which none of the other new age small business folk are able to produce at any price: Your True Horoscope.

Astrologically, you are not what you seem. Unlike the inferior products sold by our competitors, our horoscopes take account of your one and a bit star sign shift to the left due to the precession of the equinoxes since the Stiwkuf invented astrology way back in the olden days. Also (and for no extra charge) we give you all **thirteen** of the Twelve Signs of the Zodiac. But wait! There is more!! Our meretricious "Zodiacal Light Program" will include, *absolutely free* and post free - provided you read Your True Horoscope within the next

666 days - the current and true details about the time the sun spends in each of the Astronomical Constellations of the Ecliptic. Now you could not do better than that could you?

Should you, perchance, feel that the horoscope below, which is provided *gratis* to the *hoi polloi*, does not fully reflect all of your finer qualities you should phone Dial-a-Skeptic on 03 6234 1458, making sure that your credit card is handy. Then, due to the infinite flexibility of astrologers towards people with money, a horoscope more suited to your honour's particular requirements will become instantly available. If, before parting with your shekels, you should wish to test our skill by not telling us your star sign we guarantee that we can determine it within a baker's dozen prognostications.

Correspondence will be entered into by the management about any aspect of this marvellous document. We have total confidence in our products. We guarantee that there are no greater astrological truths in the universe than those set out herein.

Your True Horoscope

ARIES – The Ram.

(The false dates alleged in inferior competing horoscopes are March 21 - April 20. The really, truly dates are **19 April to 13 May**. The sun sojourns for 25 days in Aries.)

You consider yourself as sympathetic and a good listener. Most people think you are a sucker as you nibble away at long dead ideas. You are a woolly-minded, wishful thinker whose greed, vacuity and gullibility make you an easy target for conmen. You will probably fall under the spell of a proselytising, charismatic business sect, such as the "Mind, Body and Wallet Festival Church" which was recently exposed by Sir Jim R Wallaby. You are the kind of person whose social life will greatly improve should you move to Tasmania or New Zealand.

Celestial Portents: Be warned - Alpha Proxima looms close and verily lies at the crux of things.

Relationships: Superb vibes for consummation with your new love, but alas, Pluto's orbit is presently elliptical. Your spouse will find out, the divorce will be costly and you will resume the practice of onanism.

Careers: Your career choices are few indeed. Something involving your muscles seems likely. If your psychic aura is scintillating, multidimensional and ectoplasmic then perhaps your secret aspiration to be a Crowd Control Engineer could come true. If, untypically for the Ram, you are intelligent then you might possibly aspire to be a ministerial Spin Doctor or

gain ascendancy in another disreputable, but power-centred calling.

Money: You will see some money from time to time, but not much. Your stupid belief in luck persists and you will continue to fantasize a lotto win. You will be endlessly disappointed.

Health: You are going to die - sooner and more horribly than you anticipate.

TAURUS - The Bull.

(False dates alleged by the unworshipful are April 21 - May 20. The "no bulldust" dates are the 37 presaged days from **14 May to 19 June**.)

Taureans see themselves as practical and persistent with firm views and dogged determination. Other people think you are a prejudiced, stubborn and boof-headed oaf. You probably voted for the No Notion Party. Unfortunately for you the Government knows about this and "They" will get you in the dead of night! Bovine Taurean women typically breast feed for several years because Taurean men like to play with the empties.

Celestial Portents: A great disaster will happen somewhere during the Ides of Apray.

Relationships: You will soon commence yet another brief, shallow and meaningless affair with a suboptimal person.

Careers: Obscurity is your birthright and you shall easily find it. Taurean career choices usually involve brooms, mops and

buckets.

Money: You are an accomplished loser! But keep playing the pokies and buy lots of lotto tickets; your chosen deity may hate you, but the government needs your gambling tax.

Health: Your idiotic consumption of quack remedies, vitamin pills and herbal nostrums will shorten your life by more years than you would save by giving up smoking, alcohol and overeating.

GEMINI - The Twins.

(False dates asserted by the dammed: May 21 - June 21. The real flowering of Gemini is during the 31 auspicious days from **20 June to 20 July**.)

Geminis are quick and intelligent thinkers, but are usually in two minds about things. You are both a vicious gossip and an idle dreamer. Geminis frequently have beautiful faces and firm toned, lustrous skinned bodies which belie the cesspits of their minds. Such Geminis tend to be bisexual. Geminis usually like both kinds of music: country *and* western.

Celestial Portents: The coriolis force is a major influence and its effects are virtually ubiquitous. Be cautious lest your vital bodily fluids spin out of control.

Relationships: While Venus illuminates the evening sky your exploitative and controlling attitudes will continue to blight your love life.

Careers: A career in a specialist bordello for bi-sexuals is an obvious choice.

Money: Geminis proficient in pandering to the perversions of politicians or the predilections of piously pompous papists will accrue considerable wealth. The others should book a lifetime berth at St Jude's Night Shelter.

Health: Your multiple hypochondria are about to bear fruit.

CANCER - The Crab.

(No, no! It is not from June 22 - July 23, the sun truly dwells in Cancer for but 20 wondrous days from **21 July to 9 August**)

Crabs are the pioneer type and get under people's skin. You are an aggressive self-centred loner. You hold people in contempt unless they are powerful, in which case you are obsequious beyond belief. You are quick tempered, impatient, and scornful of advice.

Celestial Portents: When Halley's Comet next approaches the ecliptic your antediluvian status will become apparent to all.

Relationships: You will soon have yet another deep and meaningful overnight relationship.

Careers: You will continue to waste your meagre savings on stupid, get-rich-quick schemes. Pyramid selling, multi-level network marketing hysterias or getting in on the ground floor with the latest agricultural scam seem likely. Your next venture will be selling that sovereign panacea: "All Natural Rhubarb Leaf Herbal Tonic" - made in your very own kitchen under franchise from the promoter. After you are paroled you will spend most of your life on the dole and leave an estate worth less than a politician's promise.

Money: You will enrol for an in-depth weekend training course such as "Relationship Counselling for Security Officers", "Economics and Ethics for Politicians" or possibly the ever popular, "All Things Are Bright and Beautiful in the New Age". These will fail to deliver, just like everything else you try. (Do not forget your pre-booked appointment with Centrelink. It is your last hope for porridge money.)

Health You will have problems with your brain, bones, muscles and viscera, but otherwise all will be well.

LEO - The Lion

(Specious dates July 24 - August 23. Real dates: The 37 wondrous days from **10 August to 15 September**.)

Leos consider themselves born leaders. Really you are just pushy. Most Leos are roaring, loud mouthed and foul tempered bullies. You are inordinately vain and cannot tolerate honest criticism. Your dictatorial arrogance disgusts even your mother.

Celestial Portents: Beware, the sun rules your future and it will attain its zenith tomorrow.

Relationships: A whole new attitude is required if you are to succeed in any personal relationship to which you aspire. Lengthy psychotherapy is only the beginning. If you have to sit lopsided due to wallet bulge please phone the Skeptical Psychologist on 03 6234 1458 for an early appointment.

Careers: Leos are usually thieving bastards. Politics is your natural career choice. If you are too clever for politics, success awaits you as an entrepreneur, possibly with a Spanish connection.

Money: Should you be clever, unlike most Leos, then you will become expert at accepting bribes and kickbacks. If you are dull and socially inadequate, which seems more likely, your stars suggest that you will unsuccessfully attempt a career in burglary and stealing. You will eventually obtain a degree by diligent study after you have finished each day's hard labour in your local slammer.

Health: The good news is that people who die young have really bonzer funerals.

VIRGO - The Virgin.

(The make believe dates used by competing astrological fakirs are August 24 - September 23. The real dates are the 45 mundane diurnals from **16 September to 30 October**.)

A great horde of very ordinary people like you were born under this most lengthy of all star signs. Virgos are tediously logical types who hate disorder. This nauseous nitpicking alienates your few friends. You are cold, unemotional and exsanguine. You often fall asleep while making love. That is, if you are one of the few Virgos who ever get the chance once your transient bloom of youth has faded. You are probably a virgin - or you used to be.

Celestial Portents: Mercury is in control of your life and it will slip through your fingers.

Relationships: Your prospects of doona dancing decline daily. Act now! If you are a woman call me after hours today for a free consultation. If you are a man, try the Tuesday night special rates charged by the Pulchritudinous Plumpers in Patricia's Perpetual Pleasure Palace.

Careers: Virgos make excellent pimps, vivisectionists and undertakers. Vaguely possible careers include being a Peripatetic Counsellor or a Naturopath, but only if you can keep a straight face. This will be hard given your unfortunate nervous problems.

Money: Buy a raffle ticket, but immediately discard it. You are a loser!

Health: Pity the scientists have yet to develop a vaccine against cancer. In the meantime, try echinacea tea and Tahitian noni juice. They wont help, but they wont hurt!

LIBRA - The Scales.

(False and erroneous dates - September 24 to October 23. Veridical dates are from **31 October to 22 November** for a 23 day tarriance.)

Librans are the artistic type and find reality a challenge. If you are a man, you are more than likely homosexual or possibly heterosexual (but rarely both). Most Librans are promiscuous libertines and eventually catch nasty venereal diseases.

Celestial Portents: Venus is your ruling planet and Librans tend to venality. Libran gentlemen should please remember to adjust their chakras before leaving.

Relationships: There will be spectacular stars for love and romance, but not for you. They will be for the people you cherish as they look elsewhere to find a faithful lover.

Careers: Librans make frequent changes of employment and often achieve excellent ill-gotten monetary gains. Libran women frequently make excellent whores. Libran men will do well in a pseudo-profession. Try chiropractic, clairvoyancy or economics unless you are already stacking it away as the leader of a New Age sect.

Money: Wealth will come to you provided you continue to indulge your inclination to avoid honest work.

Health: Call (03) 6234 1458 for a confidential discussion about your disturbing symptoms. (Please ensure your credit card is to hand, unless you already have an account with Ophidia Oleaginous Remedies Pty Ltd.)

SCORPIUS - The Scorpion.

(Falsely asserted by inferior astrologers to be from 24 October to 22 November. In truth this paragon among star signs persists for but 7 fabulous days from **23 to 29 November**.)

Scorpios are particularly attractive people. Lucky indeed is he, or for that matter, she, who entered this present life under this noble star sign. The more pleasant celebrities, many leading intellectuals, all the modest sporting heroes, myriad famous scientists, both the honest politicians, most of the country's thoroughly nice blokes and Fred Thornett were born under the aegis of this star. (Sir Jim R Wallaby almost made it too.) So momentous is it to be born a Scorpio that bourgeois parents often alter their Libran and Ophiuchan children's birth records to allow them to pass as Scorpios.

Celestial Portents: Antares, the red super-giant star, 300 times the diameter of the Sun, is the primate of Scorpius and illuminates the glittering personalities of its children.

Relationships: The bright globular clusters of this sign bode well for your partnership prospects. Your friends and spouses will be many and true, you will wax happy and watch your perfect children thrive in the glow of your rectitude.

Careers: Success lies always at your beck. You will eschew obfuscation pursuing a simple but noble career of selfless sacrifice to your fellows. Honours, wealth and sublime happiness will be your only reward.

Money: Money will be there when you need it. Always enough for essentials and just that little extra for minor luxuries like yachts, motorcycles and fine raiment.

Health: The doctors and undertakers will curse and imprecate the heavens as you live on well past your ordained time.

OPHIUCHUS - The Serpent Holder.

(The sun strides the ecliptic in this little known constellation for the 18 days from **30 November to 17 December**.)

Few of the common people are aware of this, the thirteenth zodiacal constellation, but it is a stalwart and puissant force indeed. Ophiuchans are shrewd in business and cannot be trusted. You will achieve the

pinnacle of success because of your total lack of ethics. You are a supreme despoiler. Ophiuchans have abusive and controlling natures. Many will be murdered by their spouses in a final act of desperation.

Celestial Portents: The carrion eaters will screech at you from the limits of the spheres of heaven as you stumble in the slough of despond, cursing the mother that gave you birth: but then a golden light shall awaken you and you realize that you are not President Sunnovabich of Slobovia.

Relationships: You will show a member of the opposite sex how demonstrative the Serpent Holder can be. If you are lucky, the police will not press charges.

Careers: In past lives you have been a Viking, crusaded against the infidels and slaughtered thousands as you helped carve out the Brutish Empire. Any of the exploitative career choices suit you fine. Real Estate Salesthing, Financial Advisor to the Gullible or Bank Senior Executive on a percentage of the take will all allow you to express your inner child.

Money: You have the Midas touch. If you are not already rich it is only because you are too ethical. Try to overcome this weakness.

Health: Luckily you are wealthy enough to pay the huge medical bills you will soon incur.

SAGITTARIUS - The Archer.

(Falsely claimed by ordinary, unimproved astrologers to be from November 23 - December 22, but now you know it is really the 32 glorious days from **18 December to 18 January**.)

Sagittarians are optimistic and enthusiastic. You have a reckless tendency to rely on luck since you lack talent. People laugh at you a great deal because you are always getting screwed even though you think you are really clever. Many Sagittarians are major users of recreational pharmaceuticals. Those who are not hash heads are usually hopelessly oversexed and waste their lives in an endless pursuit of orgiastic jollity.

Celestial Portents: Like your ruling planet Jupiter, you have a huge presence, but emit more heat than light.

Relationships: This week you will not be snubbed in public as much as usual. Sometime soon you will learn the value of monogamy, but too late to retain your partner's love.

Careers: Your career choices will be wrong. The more successful Sagittarians will end up in some meaningless lower middle-management role. Their bad karma forces them to do this without success until redundancy strikes.

Money: Sagittarians are never wealthy. Best to concentrate on sexual fulfilment.

Health: Say a prayer for Gough Whitlam. Without Medicare you would be soon in deep, deep trouble.

CAPRICORN - The Goat.

(Not from 23 December to 20 January, but the 28 wearisome days from **19 January to 15 February**)

Capricorns are tediously conservative and afraid of taking risks. You are preoccupied with money and are basically a mean and miserly person. You can't do much of anything and are lazy. Your personal hygiene leaves much to be desired. You have mastered the art of being a bore by always remembering to tell everything. There has never been a Capricorn of any importance. Capricorns should avoid standing still for very long as they tend to get decorated by graffitists and pigeons.

Celestial Portents: Saturn is your ruling planet and every-one runs rings around you.

Relationships: You will display great intensity in your love affairs, but your abiding, evanescent insincerity will ruin every-thing. Still, your chance of finding true love has improved and is now equal to the area of the square of the apex of the Great Pyramid of Tiwkuf.

Careers: If you can master the skill needed to say, "Yes!" you could consider a career as a mediocre business executive. Failing that early suicide seems the best option.

Money: With luck you will avoid starvation - for the time being anyway.

Health: Well, somebody has to die this year, you know. (NB Do not look up *cachexia* in the *Skeptic's Medical Dictionary*.)

AQUARIUS - The Water Carrier

(Guess what, this sign is not from 21 January to 19 February, but it persists from **16 February to 11 March** for 24 scintillating days.)

Aquarians have an inventive mind and are inclined to be progressive. You lie a great deal. On the other hand, you are careless and impractical and fail to learn from your mistakes. Everyone thinks you are stupid. Aquarians are over-represented among people who report that they have had bizarre sexual experiments performed on them when they were abducted by aliens.

Celestial Portents: Your ruling planet, Uranus, has a specific gravity less than water. This number is reflected in your intelligence quotient.

Relationships: Love is in the air, but not in the heart of the one you desire.

Careers: If you scrape into university you might just manage to get bare passes in sociology, economics or other religious studies. With luck this could lead to a pointless, middle ranking, public service career in the Department of Maunderings or somesuch.

Money: After the nice people have their share there just is not enough left for you.

Health: Examine your aura. Alopecia, halitosis, psoriasis and cranial lacunae loom.

PISCES - The Fish.

(No, the fish swims not from 20 February to 20 March, but during the 38 days from **12 March to 18 April**.)

Pisceans have a vivid, paranoid imagination. You just know that you are being followed by sinister forces. You are a bungler who has minor influence over your weakling associates. People will resent you for flaunting your power. You look confident, but are a moral coward. Pisceans frequently do disgusting things with domestic pets.

Celestial Portents: Beware!. The forces of nature are everywhere.

Relationships: No luck here. You will botch your one chance of showing that the fish is not as cold and distant as its ruling planet, Neptune.

Careers: Other than as a lawyer, you have little hope of a successful career in peacetime. The next war, however, will present you with major opportunities.

Money: Remember these keywords, looting and swindling.

Health: You will bring new inventiveness to interesting public displays of your mental illness.



Branch News

NSW meetings

In June NSW Skeptics hosted a cocktail party at the Australian Museum to present its Director, Prof Michael Archer with a scroll honouring him as Australian Skeptic of the Year for 1998-99 (see below). Sadly the turnout was well below the expected numbers and the committee will have to reconsider venues and times for future branch functions. Those who attended the function were treated with a fine example of the reason why Mike Archer is so highly regarded as one of this country's genuinely original and exciting scientific thinkers.

He took as his theme the possibility of resurrecting an unique species of Australian fauna, the Thylacine (Tasmanian Tiger), which is believed to have been extinct since the 1930s. The Australian Museum has a young specimen preserved in ethyl alcohol and this, along with a number of others from museums around the world, forms the pool of genetic material from which it might be possible to clone this animal back into existence. An exciting prospect. Mike has promised *the Skeptic* an article on this topic for the next issue.

The next NSW meeting will return to the highly successful format and venue of our April meeting, a buffet dinner and talk at the Chatswood Club on Friday, October 8. The talk, entitled "You Don't Have to be a Rocket Scientist", will be given by Ian Bryce who is a rocket scientist. Ian will answer those perennial questions that plague anyone who has ever pondered the riddles of rockets, the secrets of satellites and the mysteries of moons (such as "How does a space toilet work?" or "How do you slow down by speeding up?"). Full details are contained in the loose leaf insert.



Australian Skeptics Inc
has great pleasure in awarding the title
Australian Skeptic of the Year,
1988-9
to
Michael Archer

Whose incomparable discoveries of the prehistory of Australian animal life, whose clear exposition of the value of research and the scientific method, and whose uncompromisingly sceptical and forthright exposure of creationism and other pseudosciences, have contributed so much to critical thinking and the intellectual health of our society.

Richard Gordon
President,
Australian Skeptics Inc

Barry Williams
Executive Officer,
Australian Skeptics Inc

The Liver-Cleansing Diet

Joe Proietto

Sometime during my tenure as president of the Australasian Society for the Study of Obesity, I was rung by a journalist from a Sydney newspaper to give an opinion on the "liver-cleansing diet" in the treatment of obesity. As a devout and enthusiastic Skeptic, I instantly replied "it is a lot of rubbish".

On December 31, 1997, as is my habit each year, I reflected on life in general, where I was going and how I could improve myself. An issue that came to mind was my increasing intolerance of "alternative medicine". Just as the clock struck twelve I determined that I would be more tolerant in the future. I needed to be, because in my estimation, well over half of the population believe in all manner of alternative forms of medicine such as homeopathy, iridology, naturopathy, pyramid power, etc. In fact, I would say that Skeptics are very much in the minority in the population. Could it be that we are wrong?

A chance to redeem myself came quickly. Some days into the new year I was in my local chemist shop picking up a roll of film, when my eyes fell upon a book titled *The Liver Cleansing Diet* by Dr Sandra Cabot and in bold red letters the words **Love Your Liver and Live Longer**. This was the very liver cleansing diet that I had thoughtlessly described as a lot of rubbish. This was my chance to educate myself. I picked up the book and was inspecting it before purchase, when the friendly attendant came over to assist me. "Is this the book about the famous treatment for obesity?" I asked. Seeing that I was not particularly overweight, she said "Yes, but it is good for all sorts of other things as well" - a fact that I eventually confirmed by reading the book. She went on to point out that an important part of the treatment was the taking of some liver cleansing tablets, the Livatone liver tonic capsules, only \$39.95 for 240. I politely declined the tablets preferring to purchase the book.

The book has a preamble written by Dr Cabot. We are told that the liver cleansing diet is not a trendy weight loss diet for the 90s. Many fad diets come and go, but "In contrast, the liver cleansing diet is easy and safe and is really a form of awareness or consciousness which will give you the key to a strong immune system and healthy blood vessels".

It was clear from this preamble that poor Dr Cabot had been given a hard time by a couple of thoughtless people who were, I fear, like I used to be. She quite rightly points out that:

...the most amazing thing of all is that these two critics bag my book without first talking to me about my results or case histories and neither of them had tried the diet on any of their sick patients to see if it really worked. How can anyone know the benefits of a particular diet or therapy without evaluating its effects upon patients first.

This was precisely the scruples I was having on New Year's Eve. However, Dr Cabot is not one to be trodden

down by such thoughtless criticism. She comes out fighting. In the third last paragraph, she says "... thankfully we live in a democracy and have freedom of thought and speech although some would wish it otherwise". She goes on to say "let's not suffer from what I called the fossilised brain syndrome, where lateral and original thinking becomes a crime".

I was moved by these words. Dr Cabot deserves to be given a chance to prove the effectiveness of her diet. She had mentioned in the introduction that she had results. I searched two large databases to look for published results of the diet. Sadly I could find none. Certainly there are no references to her own publications in the book. However, what is in the book immediately following Dr Cabot's introduction, are 12 testimonials from grateful patients who have had all manner of serious illnesses corrected by the liver cleansing diet, including *acne rosacea*, *sclerosing cholangitis*, *hepatitis C* and of course obesity.

Each of these unnamed individuals was absolutely convinced that the diet had caused their improvement. One of them, a Mrs K from South Australia, found that the diet was very effective for her weight problem. On the liver cleansing diet she lost 11 kgs. She states that previously she had had a problem losing weight even though she did not eat excessively. Indeed, she says, "the less I ate the more I would put on" which is truly miraculous, reminding one of the parable of the loaves and fishes where the more the faithful ate the more food appeared. Sadly, this first part of the book was a little disappointing, given that it is generally agreed that anecdotal evidence of this quality is no evidence at all. With this preamble over, the book began in earnest.

Chapter 1 is titled "Introduction to the Liver-Cleansing Diet". In the second paragraph of the first page, Dr Cabot says:

I must admit it took me more than twenty years of medical practice before the solution dawned on me! The liver, the supreme organ of metabolism had to be the missing key. It seemed so simple and yet so incredible; why hadn't someone thought of this before?

Why indeed? After all, we all know that the liver is the largest organ in the body. How could we have missed it. However, the key issue, and the most important lesson for those of us interested in obesity comes in the following paragraph, where she says "Excessive weight is a symptom of liver dysfunction and not solely due to the number of calories you eat". There you have it. Obesity is due to a disorder of the liver. I was stunned. Here we had a novel new theory, obviously come to us by what appears to have been divine inspiration, which I must admit was not yet supported by any publications. Pitted against it, was over 30 years of research with thousands of publications suggesting that, just possibly, the hypothalamus might be responsible for regulation of body weight.

What could I do? I desperately wanted to be fair to Dr Cabot, but the lack of published evidence worried me. Maybe I was missing something. Perhaps the evidence that the liver caused obesity would come soon. I was not reassured when Dr Cabot admitted that her vast knowledge of the liver was not learnt at medical school but rather as we learn on page 9:

As a medical student I spent many hours sitting in with leading naturopathic doctors as I was intrigued by their natural healing techniques ... It was with such naturopaths that I first learnt of the tremendous importance of the largest organ in the body - the LIVER ... In all their patients naturopathic doctors examine the state of the liver through various techniques such as iridology, acupuncture, pulse techniques and from the patient's history.

But at least the treatment was simple. Dr Cabot says on page 11:

When you follow the Liver-Cleansing Diet you eat delicious liver-cleansing and liver-friendly foods and your liver will then give a big sigh of relief and merrily get on with its job of regulating metabolism and burning fat.

However, although the diet is simple, you do need some help and this is given in the very last line of Chapter 1, which says;

To enhance this programme I have included natural therapies for liver-cleansing and healing on pages 66 to 71.

These natural therapies are none other than those tablets that the friendly pharmacist assistant was trying to sell me at \$39.95 for 240.

Chapter 2 asks the question "Who Can Benefit from the Liver-Cleansing Diet?" I was very pleased to read that it is useful for just about all illnesses that beset humanity, including obesity, all manner of liver disease, gall bladder disease, high blood pressure, general digestive problems, irritable bowel syndrome, imbalance in the immune system, auto-immune diseases, chronic fatigue syndrome, arthritis, allergies, headaches and migraines. It's even a cure for old age. The diet will increase longevity. As Dr Cabot says, "older persons will find the liver cleansing diet a great tool for increasing longevity and vitality and staving off the degenerative diseases that unfortunately have become so common in our ageing population". At last, something that had scientific evidence. Although Dr Cabot does not quote them, studies have indeed shown that if rats are food restricted, they live longer. Maybe there was something in this after all. I read on.

Chapter 3 is titled "What are the Symptoms of an Unhappy Liver?" These are multiple and include a coated tongue, circles under the eyes, a bloated feeling, poor digestion, nausea, weight gain, constipation, irritable bowel, unpleasant mood changes, depression and foggy brain, allergic conditions, headaches, high blood pressure, fluid retention, hypoglycaemia or unstable blood sugar levels, an inability to tolerate fatty foods, gall bladder disease and gallstones, chronic fatigue syndrome, excessive body heat and others.

In this chapter we are also told that support for the theory even comes from Chinese medicine.

The Chinese have a liver remedy with the delightful name of "the free and easy wanderer" that they use for depression and it contains the Chinese herb *Xiao Yan Wan*. We can all become free and easy wanderers, and slim and beautiful wanderers as well, if only we will take care of our livers: the Liver-Cleansing

Diet will enable you to do this. A good liver tonic (see page 71) will also help to bring back the free and easy old you.

Chapter 4 delves into "Liver Physiology and Function". This chapter clearly illustrates that Dr Cabot did not entirely waste her time in medical school. The function of the liver is explained and among other things we are told that it regulates protein metabolism. The liver manufactures many proteins. I got very excited when I read that "it makes sex hormone binding globulin which is the protein that binds the steroid sex hormones". This much I already knew, but what came after was a revelation.

The healthy liver is essential for a good sex drive (libido) and if your liver is producing excessive amounts of the protein sex hormone binding globulin your libido may be poor. Many people who have followed the liver-cleansing diet have told me that it has improved their libido.

For that alone I think this diet is worth trying.

Chapter 5 lists the 12 vital principles to improve liver function which include listening to your body, drinking 8-12 glasses of filtered water daily, avoid eating large amounts of sugar, not becoming obsessed with measuring calories, avoiding foods you are allergic to, etc. Some of the advice is quite sensible. I cannot argue with anyone who advises eating fruit and vegetables. So far however it is not clear how this diet differs from others which involve reducing caloric intake.

Chapter 6 lists a variety of different natural remedies for the liver. The interesting thing about this chapter is that it is the only one that contains references. However, the references refer largely to the *Australian Journal of Herbalism*. Surprisingly, no names of authors are mentioned, nor are page numbers, which makes it difficult to chase up the articles. I did however find that this journal is kept in the library of the Victoria University of Technology in Melbourne. Sadly, Vol 3, issue no:4 and Vol 4 issue no: 1, the issues quoted in the book, were missing from their collection. It is peculiar that these particular references were quoted since I took the trouble of doing a Medline search on the various agents that are mentioned in Chapter 5. There is literature in the mainstream scientific journals in which these substances have been tested, with mixed results. Some do report positive effects on liver function, others do not. However, even in those that work, the effects could hardly be called a "life-saving breakthrough".

The second half of the book is a description of the diet and proposes various recipes. I did not read this in great detail. No doubt, the diet is good because it involves low-fat and more vegetables and more fruit. None of us would argue with that. The problem I have is the claims made for this diet are based on no scientific evidence and the simplistic blaming of the liver for a multitude of different ailments. I will quote again Dr Cabot's own words - "How can anyone know the benefits of a particular diet or therapy without evaluating its effects upon patients first". On this we agree. What we clearly don't agree on is what constitutes proper evaluation. There is overwhelming acceptance in the medical and scientific community that any new therapy or any new claim for an old therapy must be tested in a controlled trial, preferably in a double blind fashion.

Continued on p 56 ...

The GST as it will apply to religious services

Rosemary Sceats

As Richard Lead has previously pointed out, the 10% GST will not apply to religious services. There are only two relevant stipulations in the proposed GST legislation (See Subdivision 38-E - Religious services.):

1. The supply of the service must be by a religious institution.
2. The supply of the service must be integral to the practice of that religion.

The accompanying Explanatory Memorandum sheds more light on what constitutes a religious service, a religious institution and a religion:

5.92 A supply by a non-religious institution that is similar to a religious service is not GST-free, such as a marriage ceremony conducted by a civil celebrant.

This is blatant financial discrimination against free-thinkers. One would think that in a modern democracy, "freedom of religion" would encompass "freedom from religion".

5.93 A supply by a non-religious institution for use in connection with a religious service is not GST-free, even if such a supply would have been GST-free if made by a religious institution.

This presumably applies to the hire of premises or the supply of flowers, organist or a singer. A freelance singer or songstress ("The Wedding Singer"?) would attract the GST, whereas "The Nuns' Chorus" would not.

5.94 The Courts have determined that, for a body to be regarded as a religious institution:

- its objects and activities must reflect its character as a body instituted for the promotion of some religious object; and
- the beliefs and practices of the members of that body must constitute a religion.

5.95 The two most important factors for determining whether a particular set of beliefs and practices constitute a religion are:

- belief in a supernatural being, thing or principle; and
- acceptance of canons of conduct which give effect to that belief, but which do not offend against ordinary laws.

5.96 Religious institution is not confined to the major religions.

Presumably, the services of devil worshippers and witches' covens qualify for GST-free status, as long as they don't engage in such unsavoury practices as sacrificing and eating babies!

However, I doubt whether the major religions would get past first base, if examined objectively and dispassionately. Consider the following:

1. An eye for an eye, and a tooth for a tooth.
There must be a law against such a GBH assault.
2. A woman shall be subject to her husband.

3. No woman shall be allowed to teach, or to hold authority over a man.

4. No women priests allowed.

The last three surely contravene equal opportunity and anti-gender discrimination laws.

5. Up to four wives for one man.

There's an ordinary law against this one.

And finally:

6. What about the cannibalistic consumption of human flesh for sacramental purposes (otherwise known as 'The Eucharist')? Surely there's a law against that!

In view of the tax concessions extended to religions and their practitioners, I've decided to found my own, which should be a "complying religion" for GST purposes.

Rosemary's Baby

I thus invite you all to convert to Rosemary's new "Feel Good" faith.

I'll be the High Priestess of having a good time and will be known to the world at large as an incarnation of the Goddess of Hedonism.

The object of veneration ("THE SUPERNATURAL THING" in question) will be something reasonably tangible, the account balance in my personal superannuation fund. The ultimate goal of the new religion will be for the account balance, through donations by the faithful, to reach ever greater, even dizzying heights, as it soars heavenward, so greatly exceeding natural levels that it will have to be described as "supernatural". The name of the fund will be, appropriately enough, "The Most High".

The account balance will be zealously checked and attended to daily by the High Priestess, with a devotion and reverence amounting to religious awe.

The Ten Commandments

These have already been composed, and, once the services of a stonemason have been secured, will henceforth be carved in stone. (Failing that, I'll just scratch them into some wet concrete.)

They are as follows:

1. Thou shalt pay proper homage to "The Most High" by honouring it with frequent, regular and generous donations.

2. If it feels good, do it.

3. If it feels really good, do it again.

4. If it sounds too good to be true, assume it is.

5. Assume nothing.

6. Trust nobody.

7. Get it in writing.

8. Always count your change.

9. Never say more than you have to.
10. Remember to keep watch for Murphy - he lurks and works everywhere.
11. Stay away from annual general meetings - you might get elected or conscripted to something.
12. Don't get mad, get even. (Or, as men do to you, do you also to them in like manner.)
13. Don't get caught. (This was my late father's favourite commandment, and has been recycled from an earlier regime.)

All donations to the fund should be undeducted contributions, rather than tax deductible, as these attract favourable taxation treatment in the Hereafter, otherwise known as my retirement from the workforce to a life of leisure and pleasure. Once the account balance of "The Most High" has reached sufficiently astronomical proportions that I am confident it will keep me in a Rolls Royce nursing home, if necessary until the age of 105, a pronouncement will be made that "The end of the world is nigh", and I shall depart this vale of tears for a better life in the Hereafter.

Religious services, to which a GST-free fee will apply, will consist of the bestowal of feel good blessings, as follows:

Bless you, my child. Go forth, increase and multiply, and enjoy yourself while you're at it.

After the blessing service, hers (not hymns) will be sung, after which the congregation may disperse.
Ah women!

Curse you, Rosemary Sceats

I acknowledge there is a Messiah born every minute, but with fully 77% of Australians failing to attend church during Easter 1999, the last thing I need in our dwindling salvation-for-sale market is yet another competitor.

But in the spirit of ecumenicalism, I am prepared to offer you your first and last piece of free religious advice. Establish your personal superannuation fund offshore. You see, as the Goddess of Hedonism, you can draw a tax-free remuneration package, courtesy of the world's most afraid-of-the-bishops Parliament - ours. Your Australian superannuation fund will attract a 15% tax on contributions, plus you will be personally taxed at 16.5% on all contributions withdrawn from the fund. But if you establish your fund overseas, both taxes are legally aborted. As an Australian Skeptic you may well ponder why everybody doesn't establish such offshore superannuation. The reason is compelling - fringe benefits tax at 47% is payable on contributions to offshore superannuation funds, more than negating any income tax benefits. As the Goddess of Hedonism, you have now joined the only occupation in Australia exempt from FBT on such benefits. I trust money was not your only motive in becoming religious?

Rosemary, I respect your Decimal Commandments. If only the Catholics and the Protestants could be so numerically flexible we would not have the dilemma

of the Catholic Ten Commandments differing from the Protestant Ten Commandments. Each competitor draws its divine inspiration from Exodus 20, and yet nowhere in Exodus 20 do the words "Ten Commandments" appear. We must persevere lineally, until Exodus 34 officially stamps the "Ten Commandments" as such.

And, gentle reader, which do you want first, the *Exodus 34* bad news, or its good news?

The bad news?

One of these decimally-inspired profundities is "thou shalt not boil a kid in his mother's milk." I can only empathise with my fellow Skeptics who have long fantasised about doing this.

The good news?

Adultery is not mentioned.

Rev Richard Lead
Universal Life Church
California [where else?]



... Liver-Cleansing Diet from p 54

The words "controlled trial" do not appear anywhere in the book.

I looked up Dr Sandra Cabot on the Internet (<http://www.whas.com.au/sandra.htm>). She has a very professional Home Page which includes information about the Women's Health Advisory Service and how you could join for a mere \$55.00 per year. This will entitle you to receive a membership card, a newsletter, naturopathic table, a free bottle of Evening Primrose Oil and one free copy of *Sandra Cabot's Handbag Health Guide*. I found this internet site just at the right time, since there was a special announcement stating that if I joined the network now, for \$55.00 I would receive a massive 20% discount on the new powders Femmphase containing phytoestrogens and Livatone, the liver tonic. I am not sure that the Femmphase would really be for me. There was a large table of various products that could be brought from Dr Cabot. Everything from books, Acidophilus tablets (\$18.10 for 90), all the way to Vaginol Tea Tree Cream for vaginal application (\$15.40 for 100gms).

Clearly displayed there is a disclaimer stating that Dr Cabot's information

... should not be used as a substitute for consulting your doctor or matters pertaining to your physical health should be supervised by your health care professional. Women's Health Advisory Service and Dr Sandra Cabot and her associates cannot and will not assume responsibility for your health. It is important that you visit your own doctor regularly for a physical examination and check-ups.

Dr Cabot has clearly consulted her lawyers.

I must conclude, sadly, that this book single-handedly destroyed my resolve to be sympathetic to alternative medicine. Ultimately, however, Dr Cabot may have the last laugh, for while I drive around in a small, slightly tarnished 7 year old Ford Laser, on the internet site there is a picture of a glamorous looking Dr Cabot standing next to what I assume may be her private plane. How should we measure success? - perhaps I will ponder this next December 31.



Arizona, anodes and asininity

Ian Plimer

Travel broadens the mind. Or so they say. But does travel bend the mind? Well ... yes.

A pilgrimage to the "power point" of the new agers at Sedona near Phoenix, Arizona was made with a purged and open mind.

To my naive geological eyes, it was a fascinating area. Shallow water limey rocks, a mere 330 million years old, with fossils of all sorts of extinct critters. A glaciation-induced drop in sea level resulted in swamps, streams and flood plains some 300 million years ago and this was followed by a rise in sea level during interglacial times and the covering of the area by shallow cool seas.

Sea level dropped again 270 million years ago during another period of glaciation. At this time, much of Queensland, NSW, Victoria and South Australia was covered by ice. Melting icebergs dropped boulders on to the sea floor, muds formed in glacial lakes and widespread glacial debris was spread over much of south eastern Australia. At that time, Arizona was closer to the equator and, rather than ice, there were very strong cold winds which deposited huge dunes. Fossil sand dunes abound at Sedona, some of which have footprints of extinct reptiles.

After the glaciation, sea level again rose and the area was covered by shallow warm seas in which abundant life thrived. The Colorado Plateau was uplifted as the east Pacific Ocean was pushed under USA, canyons were carved and lava spewed over the uplifted plains and into some of the canyons. In fact, the rocks seen at Sedona are the same as those in the upper few hundreds of metres of the Grand Canyon. Remember folks, the rocks of the Grand Canyon were deposited in the "great flood" and the retreating waters carved out the Canyon.

Oxidation, weathering and erosion of the exposed limestones in the canyons at Sedona provides spectacular red rock mesa scenery so typical of northern Arizona, Colorado and Utah. That's my story which is underpinned by evidence and I'm happy to change my story if more verifiable evidence comes to light.

The other story is that Sedona is one of the planet's power points where both physical and spiritual energy flows freely out of the Earth. There appear to be four power point vortexes - Bell Rock, Airport Mesa, Cathedral Rock and Boynton Canyon. Fortunately, one can drive to all of these power points thereby increasing their new age attraction.

Since 1980, there have been various retreats, seminars and pilgrimages run by new age entrepreneurs. The name Sedona is of great significance because, if written backwards, reads anodes. This convinced me that there was clear proof of the eclectic energetic electrics and I was harmonised to accept the benefits offered by mother Earth. Like so many others, I was now prepared to ignore the fact that the town was to be

originally named after its location (Oak Creek Crossing) or the merchants who ran a store called Schnebly Station. There are good records from 1902 to show that Carl Schnebly named the site for the US Postal Service after his 25 year old wife, Sedona. Doesn't matter, I like the anodes story better.

In 1987, a credulous mob of some 5,000 attended a "Harmonic Conference" to help heal a hurting planet. At the most accessible site, Airport Mesa, circles of 12 punters chanted the sacred "Ommmm" mantra, raised their right arms to the sky and used their left arms to direct positive energy downwards. Others laid quartz crystals in the sun next to the creek at Boynton Canyon. As a result of this action, it appears that a beautiful Indian woman, 200 feet tall and dressed in a white buckskin, arose from the rocks. In the book *The Mysteries of Sedona*, the appropriately named author Tom Dongo writes of "a well known mountain climber and desert hiker (who) said he was followed for a considerable distance in Boynton Canyon by a small, three foot tall creature that was definitely not human." The most adventuresome paid \$150 each to sit on Bell Rock which was scheduled to depart for the Andromeda Galaxy. For me, this evidence was very strong so I decided to gain the benefits of physical and spiritual energy flowing through my battered bulbous body.

I could not restrain my excitement at Airport Mesa as I faced the sun, chanted the mantra and placed my arms for the flow of energy. Nothing happened. Even though it was the end of the monsoon, there was no thunder, no lighting, no rain, no energy. Even the residuum of my hair didn't tingle. Nothing. Not even a message dropped from a bird overhead. I suddenly realised my mistake. I had not paid anyone money. This was soon rectified. A quartz crystal was purchased and was laid in the sun next to the creek at Boynton Canyon. I could hardly restrain my excitement as I waited for a size XXXXL beauty to rise from my beloved rocks. Neither an ugly nor a beautiful woman appeared. Nothing.

I finally packed up my over priced quartz crystal and retreated dejectedly. Was my technique wrong? Should I have moved two paces to the left? Had all that geology added the ability for energy flow? Was this the creationist curse so fervently prayed for? Who will buy my quartz crystal at a fire sale price? Does the sacred mantra have to be hummed with an American accent? Had I not spent enough money? Have Bill Clinton's peccadillos added something to the American airwaves? Will I ever attain harmony? Should I have used hemimorphite, rammelsbergite or fuchsite rather than quartz? Was I being punished for being a Skeptic?

I am now racked with self doubt, insecurity and shattered confidence. Dear reader, help me. What did I do wrong?



The ghost tour of haunted Melbourne

Jane M Curtain

On Saturday July 10, 1999, three adventurous Victorian committee members (Rosemary Sceats, Bob Nixon and Jane Curtain) embarked on a fascinating journey through "haunted Melbourne". The tour was led by Mr Drew Sinton, Melbourne's resident "ghost buster" and proprietor of *The Haunted Bookshop* in McKillop St, who runs these inner-city ghost tours several times a week.

Representatives of the Australian Skeptics are not welcome in Mr Sinton's bookshop. In fact, he has violently declared his shop a *Skeptics-free zone*. For this reason, we kept a low profile: Rosemary, who had very diplomatically organised the tour, brought along several colleagues and friends – all of whom were sworn to secrecy about her sceptical activities; Bob managed to keep his Skeptical involvement a secret by waving his faithful dowsing stick under the nose of our satisfied and approving tour leader; and Jane, who has had an unfortunate previous (physical) encounter with Mr Sinton, adorned herself in a carefully selected disguise, complete with purple hair, Gothic-like make-up and a glittering black dress.

The tour commenced at 8:00pm in the depths of the McKillop Street bookshop. With its red velvet curtains, fake cobwebs, incense burners, sorcery and occult books, plastic and rubber ghouls and spooks, resident live black cat and taped harpsichord music, *The Haunted Bookshop* set the scene of the beginnings of a perilous ghostly adventure. Mr Sinton was clad in a long black priest's frock coat and a matching large brimmed hat. He claimed that his attire represented Melbourne's most prolifically sighted ghostly presence, apparently that of a priest. His offsider, Ms Angelica Danton, a former lawyer turned clairvoyant, kept a fairly low profile; however her qualifications in law were repeatedly mentioned by Mr Sinton as if to give credibility to her active interest in the occult. He told us that Ms Danton is currently the National Trust's unofficial clairvoyant, and that her psychic powers were truly special.

At no stage were we guaranteed that we would encounter a ghost, but we were frequently provided with anecdotes of ghost sightings on recent tours. We were told that in order to experience a ghost presence we needed to tune into the right hemisphere of our brain, which apparently controls our spiritual side, and to ignore the logical thoughts generated by the left hemisphere. We were not instructed as to how to do this, and many of us clearly failed to ignore the logical thoughts that were consistently being processed. Mr Sinton claimed that some people are clairvoyant (they see apparitions), some are clairaudient (they hear unexplained sounds), but most are clairsentient (they feel ghostly presences). I was hoping that I would be "clair-everything", but unfortunately this ambition was not realised.

Upon leaving the bookshop we embarked on a the-

atrically narrated journey through deserted lanes and alleys, abandoned buildings and popular clubs and pubs. Mr Sinton delivered a commendable account of Melbourne's history; he described the early days of Melbourne, discussing the important events which helped shape the city, and pointing out the remains of the landmark buildings. He claimed that he knew of at least 50 ghosts in the CBD, and has recorded countless sightings of these ghosts. Throughout the tour, he frequently read snippets of articles from a large black folder, his compilation of dossiers on Victorian ghosts.

One of our first significant stops was the *Francis Hotel*, built in 1854. The third floor of this building, now serving as the *Collision Nightclub*, is apparently haunted by the ghost of a kitchen hand. We were told that after a heated argument with his girlfriend, the kitchen hand (who was also a drug user) overdosed on heroin, fell through a dumb waiter, and finally met his death in a boiling bain-marie. These days, along with several present and past proprietors of the hotel who have witnessed the ghost, many of Mr Sinton's tour participants allegedly feel a sympathy pain in their left forearm – the site of the lethal intravenous injection. Nobody in our particular party claimed to feel such a sympathy pain.

For me, the most amusing "haunted" building was that of *Pugg Mahone's Irish Pub*, the meeting place of the Australian Skeptics, in Hardware Street. According to our tour leader, whose comments seemed to be supported by a very bemused *Pugg's* bouncer, the taps in *Pugg Mahone's* often leak unexpectedly. Rosemary, who investigated this particular claim after the tour, discovered that he was actually referring to the taps on the ice machine. Bob suggested that the presence of ice in such a machine means the presence of frozen water; this water would not flow continually, but would probably melt and therefore occasionally leak - particularly if the taps were not turned off properly. Could such a logical explanation explain the mysterious behaviour of the tap?

Mr Sinton clearly enjoyed the irony of the Australian Skeptics meeting in a "haunted" pub; he took every opportunity to criticise Skeptics, and he made many derogatory comments about the organisation and its members. He correctly told us that *Pugg Mahone's* means "kiss my arse" in Gaelic, but he then insinuated that members of the Australian Skeptics were likely to utter such a phrase if confronted with believers in the occult. He was also under the misinformed impression that the organised sceptical group who meets at *Pugg Mahone's* is known as the *Australian Skeptics Society*; he took great delight in informing us that the acronym for this organisation is ASS. I found it extremely difficult to refrain myself from pointing out that the acronym for the or-

Victorian attitudes

Steve Colebrook.

ganisation to which he thought he was referring is really just AS – a rather dull acronym by comparison.

Mr Sinton also read a small snippet from an article by Phillip Adams, one of the founding members of the Australian Skeptics, claiming that the author himself had experienced a ghostly encounter. Bob was very amused by this titbit, and explained afterwards that he was familiar with the original article, and that Mr Sinton had blatantly misrepresented Philip Adams by reading only a small section of it; the article, as made perfectly obvious by the words in the final paragraph, was clearly intended to “pull the legs” of readers.

Another interesting “haunted” building was the old *Cobb & Co Coaches* building in Little Lonsdale Street. We were told that this decrepit building, now used as a car park, was apparently the site of a horrific axe murder several years ago, and that an evil ghost now regularly lurks within its boundaries. According to Mr Sinton, many car park attendants and security guards have seen a mysterious white light moving across the balcony; most attendants have become so frightened that they refuse to work in the building. Mr Sinton also claimed that his tour participants regularly experience the presence of a ghost in this particular place, and he invited us to do the same. Alas, despite venturing bravely around the dark building coaxing the spook to reveal itself, none of us saw, heard or felt anything unusual. We did however manage to come up with likely explanations for the unexplained light, but we wisely chose not to reveal these to Mr Sinton, who was clearly enjoying the dramatic story he had unfolded.

Several other allegedly “haunted” sites were visited in the course of the evening – many of which were buildings we were not able to enter. Mr Sinton pointed out the evil “significance” of many of the “haunted” addresses, whose digits often added up to 13 (eg, 364) or 15 (eg, 276). According to Mr Sinton, 13 is an unlucky number, $4 (1 + 3 = 4)$ equates to death in Chinese, and 15 is the devil’s own number. Always the entertainer, Mr Sinton’s described these types of “facts”, as well the early history of Melbourne and its many ghosts, with theatrical aplomb; his voice would slow down and soften to almost a whisper as he delivered the final words of each grisly “fact” or story.

Our very last “haunted” spot (before a much-needed, apparently non-haunted refreshment stop) was the site of the *Queen Victoria Market*, where about five ghosts regularly haunt the market community. The market was apparently built over Melbourne’s first cemetery, and some 9000 bodies are still buried beneath its stalls. This, along with the numerous botched hangings which took place when the market was still a cemetery, has allegedly caused the spirits to be restless and unhappy. Mr Sinton delivered his account of hangings, death and burials from a position located directly under a beam, from which a lone hangman’s noose was strategically placed. Bob offered to use his dowsing stick to locate a few buried persons and restless spirits, and this generous offer was accepted most gratefully. To our disappointment, however, Bob was unable to locate anything (or anyone) of interest.

The general consensus from the participants in our tour group was that the three hour ghost tour of Melbourne was a great deal of fun, and well worth the money (\$20 per person; 10% discount for parties greater

I try very hard to keep up the appearance of objective open-mindedness, constantly remind myself not to scoff, mock or ridicule any of the claims the us Skeptics find difficult to come to terms with. However, an almost deafening silence booms forth from our local soothsayers who predicted that Melbourne hospitals would be unable to cope with the flow of WWII casualties, that we should be building fallout shelters, stocking up on tinned food etc, etc. So, I’ve decided to respond with a Skeptic’s T-shirt with a *Skeptics-one, Nostradamus-nil* front and a *Ha, Ha, Ha, we told you so!* back. Victory is sweet.

The radio waves are yet again silent as our regular spot with 3AK falls victim of a station reshuffle but stay tuned, I predict that we wont be muted for long.

The Vic Committee’s appearance at “Great Australian Science Show” (GASS) was another success. We had, as usual, enquires from visitors to the show, who represented a sample of the entire range of acceptance of fringe beliefs as well as many died in the wool scientists. The bed of nails continues to be one of the finest show stoppers of all time, second only to Richard Cadena’s “\$50 to anyone who can name this card” stall.

As our regular monthly knees up at Pugg Mahones continues to be the gala event on any Victorian social calendar, we thought that the more formal lectures, debates and meetings should be held far more frequently than they have been in the past and, on occasion, to be put on in country and regional areas.

Our next dinner meeting will be at Asti’s Restaurant on September 15. There, Bob Nixon and I shall expound on “The Green Pen Awards” which is subtitled “Nutters we have met”.

Check your newsletter for details.

So unless WWII is just a bit late, Cheers till next time.



From previous column

than 10). Most of us felt that Mr Sinton’s knowledge of Melbourne’s history was commendable, and that his theatrics added to the general entertainment of the tour. We were, however, disappointed in Mr Sinton’s constant derogatory remarks about the Australian Skeptics, particularly as he claimed that sceptics in general were always welcome on his tours. We found it amusing that Mr Sinton claimed that **any** person is **always** the final arbitrator in a ghostly experience, and that advice and opinions from others were simply not necessary; “What is truth for you may not be truth for everyone” claimed Sinton. He summed up his negative opinion of scepticism with the quote “To a believer, no proof is necessary; to a sceptic, no proof is possible”. Needless to say, Rosemary, Bob and I wisely chose to keep our Skeptics involvement to ourselves – at least at the time.

Editor’s note

Rosemary Sceats, one of the other Skeptical participants in this excursion gives her version, in verse, of the evening’s events on the following page.



Ghostbusting - Melbourne style

Rosemary Sceats

*It was a dark and wintry night
When Rosemary led her troops to fight
Against old Melbourne's ghostly blight*

*The closest thing to an apparition
Was Drew, who begged for recognition
As Melbourne's most prolific ghost
And led the tour as our "Mein Host"*

*In his long black priest's frock coat
And large black hat, he was worthy of note*

*There was Angelica Danton, the Tarot reader
He'd brought along, he thought he'd need 'er
In case some spook leapt from the night
With her there too, he'd be all right*

*Angelica's employed by the National Trust
For ghosts to hunt, and then to bust*

*She's a qualified lawyer, Drew pointed out
As if this gave her lots of clout
When checking haunted houses out
And coaxing shades from hiding places
When they're too spooked to show their faces
Being short on social graces*

*Hasn't he heard the lawyer jokes
That call them sharks, those dreadful blokes
Only too willing to take your money
When you get the bill, it just ain't funny*

*For a psychic, Drew could not read minds
Detecting none of the sceptical kinds
Of people in his Ghost Tour group
Who nearly landed in the soup*

*When visiting the Skeptics' sacred site
Pugg Mahones, in the dead of night
Where Mark was waiting till we all came back
While trying to forget Drew's vicious attack*

*When confronted at a New Age fest
And Mark had socked him five of the best
Questions on the trade he plied
And grabbed some brochures on the side
While browsing at the "psychic event"
And his disbelief on Drew did vent*

*Intrepid Jane, in her disguise
Would not make contact with Drew's eyes
For fear of being recognised*

*The ignorance of two ghost hunters
Of Skeptics in amongst the punters
Was food for thought, perhaps their abilities
Do not extend to psychic utilities*

*He couldn't tell that I'm a boffin
Who knows that ghosts stay in the coffin*

*A ghoul, we heard, still haunts the halls
In a lane named after Niagara Falls
The kitchen of the Francis Hotel
Is supposed to cast a nasty spell*

*A junkie ODD with a shot in the arm
And soon occasioned serious harm
When he fell through a dumb waiter door
And came to rest, not on the floor*

*But in a steaming bain marie
His head cracked open, so you see
With such a spectacular, sticky ending
Our arms from the ghoul required defending*

*But the ghoul who dwells in Lane Niagara
Could have done with some Viagra
To raise his spirit from the dark recesses
And rescue us from Drew's excesses*

*Of bloody murder we were told
In an old meat packer's hold
Of yore it housed the Cobb & Co coaches
But now it's only home to roaches*

*The axeman's ghost still hangs around
But the victim's shade cannot be found
The ghost grabs people by the shoulders
In another haunt, it might heave boulders*

*We Skeptics braved the danger spot
But nothing happened, not one jot
Though of phantoms there was lots of talk
This was the ghost who wouldn't walk*

*He took us through a scary part
Of the Queen Victoria Mart
A hangman's noose still marks the spot
Where crooks of old were dealt their lot*



*The car park covers an old graveyard
Over hordes of bodies they've cemented and tarred
It made us all feel quite downhearted
To walk upon the dear departed*

*Though all Drew's gruesome tales we heard
We Skeptics still were undeterred
We pressed right on into the night
Perish the thought that we'd take flight!*

*Dowser Bob with his coat hanger wire
Was unafraid to raise Drew's ire
He offered to dowse some haunted ground
To see if any ghosts be found*

*Flagstaff Gardens got a mention
As a spot for a convention
With the resident nurse's ghost
Who hangs around the said flagpost*

*Some of the group expected a fright
When encountering things that go bump in the night
A believer's face, at first quite hale
Turned a whiter shade of pale
He visibly jumped at a shouting noise
From a passing car of drunken boys*

*We managed to stay incognito
Until the tour was quite finito
When we breathed a heavy sigh of relief
To escape the clutches of the ghostbusting chief*

*On the subject of these ghostly matters
Drew's credibility was left in tatters
We didn't see a single wraith
I guess that means we have no faith
That something lies beyond the grave
Or there's a need our souls to save*

*Though many a grisly tale was spun
Of ghosts we spotted nary a one
No spectres, shades, no spooks or ghouls
He must have taken us for fools*

*Unless, of course, the spooks were shy
And wouldn't meet us eye to eye
By crossing from the other side
And giving up their game of hide
And seek to pass the time till dawn
It all turned into one big yawn*

*We finally hit our nice warm beds
With ghost tales spinning round our heads
No scary nightmares, though, for me
Of superstition, I'm still free.*



Banana bendings

Michael Vnuk

For our May meeting, we turned to matters religious and ethical. Bishop Ron Williams, the Anglican assistant bishop of Brisbane, spoke to us on "Values, Spirituality and Moral Courage (for the Year 2000 and Beyond)". Dr Trevor Jordan, lecturer in ethics at QUT, also spoke briefly.

President Bob Bruce's commentary on the meeting follows:

The church, it seems has little to offer but more of the same. My introduction railed against the church, from its patronising of superstition to aiding and abetting genocide in the government policies of the day against indigenous people. The Bishop glibly informed the meeting he would not be addressing any of these issues, presented with such "certitude". He did get on to his topics after 20 minutes of "why he was a bishop". "Values" seem to come from selected readings of the Bible, "spirituality" was defined as "otherness", and "moral courage" is the boldness derived from objecting to the practical solutions of non-Godists." Somehow, I don't think anyone's views were changed.

* * *

The June meeting was our annual general meeting, our third since incorporation. Once again, Bob Bruce was nearly crushed in the stampede to be president, but he triumphed (and if you believe that, do you want to buy a bridge?). Richard Buchhorn remains as treasurer, I'll continue to report on our activities for "the Skeptic", and Linda Shields has accepted the position as secretary. Linda was in the UK at the time of the AGM. (We congratulate her on her recent PhD and the award of a Churchill Fellowship to be undertaken in Scandinavia, Iceland and the UK.)

Many suggestions were made concerning future activities and speakers which we hope to follow up in coming months. As Bob notes, our meeting format of dinner and speaker seems to be a winner, as people can have a chinwag, a sherbet and an interesting topic to chew on.

* * *

The Southern Cross University, centred at Lismore in northern NSW and the recipient of the Bent Spoon Award in 1998, offers a four-year Bachelor of Naturopathy. Three members of the academic staff came to speak to us in July: Dr Scott Hahn, Dr Alex Arellano and Margaret Khyentse.

First thing, they disassociated themselves from another academic at the university whose support of "empowered water" was one reason for the Bent Spoon. We were told that the academic left soon after.

The naturopathy course focuses on four areas, phytotherapy (herbal medicine), nutrition, tactile therapies (massage) and homeopathy, after a basic course in biological sciences and clinical studies. Areas such as iridology are specifically excluded. What intrigued many of us was the general dismissal of the homeopathy segment of the course by the speakers. Clearly, there are divisions in the department.

Some of the audience's questions concerned whether having naturopathy as a university degree was giving the whole field too much respectability, especially with homeopathy included. The answers included that they are trying to bring more science to the areas and it is hoped that a university setting, as opposed to unregulated private colleges, should lead to more critical thinking.

* * *

Dr Carl Wieland, accompanied by several of his colleagues from Answers in Genesis, has been nominally booked to speak to us on 25 October. Some of the discussion at the AGM concerned the format of the evening with Dr Wieland. At the suggestion of a member, before he comes we will have a warm-up session to bring members up to speed with the latest in creationist and anti-creationist thinking. The warm-up session has been set for our 30 August meeting and two Queensland Skeptics have volunteered to speak: John Stear, who maintains the *No Answers in Genesis!* Web site (see *the Skeptic*, 19:2, p35), and Cheryl Capra, a science teacher who has been dealing with creationists in schools.

* * *

Several members have been following up the Pest Free devices reported on by Colin Keay (*the Skeptic*, 19:1, p19), either by passing copies of Colin's write-up to stores selling the devices or by writing letters to the head offices of the stores involved. Charles Coin has been in contact with the manufacturer's national manager, Scott Connell, to obtain access to the scientific research on the devices. However, it seems "no meeting was possible", with or without lawyers present.



Queensland Skeptics meet at the West End Club, 2 Vulture Street, West End, on the last Monday of each 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.

Tasmanian trivia

Fred Thornett

Skepticism in Tasmania has reached a new high. We will be listed in the next issue of that best selling tome, the Hobart *White Pages*; look not under Tassie Skeptics, but under our new name which will soon be famed from D'Entrecasteau's channel to far off Port Arthur. We are now Skeptics Australia (Tas) Inc, as of the AGM last June. Our phone remains 03 6234 1458.

* * *

Our major activity recently was the Grand Solstice Party held at President Warren Boyles' house on June 26. To this end we arranged for the Tasmanian Telekinesis Society to delay the Earth's movement in its orbit for a few days so that the party's timing would be kosher. So, if your watch has gone funny recently, do not look for Uri Geller, just send me the money in a plain brown envelope.

At the Solstice Party it was announced that the Premier of Tasmania was unable to become the Patron of our esteemed learned society. We realized immediately that we should have sought out the best man for the job in the first place. Accordingly I am pleased to announce that Sir Jim R Wallaby has been pleased to become our Patron for Life plus 50 years. This high honour carries with it the privilege of visa free entry to our island paradise and the right to buy lots of premium Cascade and Boags to drink with the Lord High Scrivener. (Premium Cascade and Boags were respectively judged the best beers in the world in 1997 and 1998. And, no, it was not at the Hobart Beer Fest, but in Europe mate. In Holland - so I am told. Don't believe me? Buy a few bottles and do a double blind trial. All in the name of science!)

[I've been blind plenty of times after sampling Tassie beer, but I've never been put on trial for it. **Sir Jim**]

* * *

One of our most esteemed members, Dr Brian Walpole, is also the President of the Tasmanian Branch of the doctors' trade union, the AMA. Wearing

his medical hat Brian is currently in Timor where he revels in the wondrous title of Vice-consul (Medical) at the Australian Consulate in Dili. He has sent back all manner of interesting photographs of local scenery, spearfishing, Indonesian chaps with guns and important looking vehicles. (Sorry Brian, I have already sold them to the CIA.) Hopefully he will soon return to Hobart where I have arranged for him to attend a course on using digital cameras so that photos of Brian standing next to statues of Jesus clearly show the faces of all concerned.

* * *

John Sluis, our Treasurer, has found his duties so onerous that he has decided to leave the country. Allegedly to go to ancestral Holland for a year or maybe longer. Call me suspicious if you like, but I have drawn the attention of the authorities to the following items we found in his locker. Cassette tapes entitled: *Portuguese in Five Hours* and *Teach Yourself the Samba in the Privacy of Your Own Bedroom*. Also an interesting book: *The Absconding Entrepreneurs Guide to Rio de Janeiro and Brazilian Culture* with sealed section written by overseas resident expert, Chris (The Lungs) Skase.

John's shoes as Treasurer will be filled by Dr Chris Sharples, geologist and all round good bloke. ↻




Get a Skeptic lapel badge at the annual Convention

ACT acts

Neil Woodger

The Canberra group has had some lobbying practice recently. Lobbying as you will know is a major industry in the ACT, so it's time Skeptics in the national capital learned some new skills.

The target of our wrath was Questacon (The National Science and Technology Centre), well known to all our readers as the venue for last year's Skeptics' convention. One of our members found a *Beginners' Guide to Astrology* on the shelves of the Questacon bookshop. The shop manager said that the item was a "top seller, especially to children", and declined to remove it. A reference was made to "puritans pulling items off the shelves". Both the member, Peter Barrett, and myself as president wrote to management. After a delay, we are pleased to report that Questacon decided to remove the item, thus avoiding a lot of negative publicity and a nomination for the Bent Spoon Award. Neither of these threats was used, I'm pleased to say.

* * *

In a sequel, Peter Barrett went back in to the shop, only to find another item, this time a book providing a rather uncritical description of "psychic" phenomena. Peter once again put fingers to word processor (I can't say "pen to paper" these days), and posted off a protest letter to the effect that the "purchasing guidelines" for the shop referred to by management be redrafted to exclude material that is insufficiently critical of such matters, such as failing to include relevant evidence.

* * *

In other news, we have decided to de-emphasise membership in the usual sense and follow the Australian Skeptics model of a decent sized committee and a mailing list of all recent members and Skeptics magazine subscribers. I will write to all previous members soon to explain.

We are planning a fund raising/publicity dinner, and a presence, ie, a stall, at one of the (unfortunately) large and frequent "psychic fairs" later in the year. ↻

Southerly aspect

Allan Lang

Conference News

We are proud to act as host for this year's National Conference. You will find a flier for the Conference elsewhere in this magazine.

Confirmed speakers now include Prof Paul Davies, Prof Ian Plimer, Dr Stephen Bassler from the Victorian Skeptics and Dr Geoffrey Dean from the WA Skeptics. Other speakers include Dr Paul Willis, host of the ABC's *Correx Archives*, Brian Watts and Peter Bowditch, who will enlighten us on the facts behind the Y2K issue, Carol Oliver from SETI and Prof Maciej Henneberg.

If you book and pay for your tickets before August 31 you will receive a \$10 discount on the price of a two-day ticket. Check the flier for our contact details.

The conference will be held on November 6 and 7 at the Adelaide Convention Centre, a world-class venue. We will have books and other items for sale on the day.

On the Saturday night, the Conference Dinner will be held at the Norwood Function Centre. Dinner will be a buffet with catering by the renowned Ayers House, and is good value at \$30 per person.

The winner of the Bent Spoon Award will be announced at the dinner, and you will be entertained by the after dinner speaker, renowned author, Peter Goldsworthy.

For those who will travel some distance to get to Adelaide, Brian Miller will fill the gap between the close of the session on Day 1 and the dinner by conducting a "South Australian Wine Tour In One Room". The wine tasting is free to those attending on Saturday.

We can't decide whether to have one or two days of social activities before or after the conference, so we'd like to hear what you think. We could travel up to the Barossa Valley, or down to the Southern Vales wine region including a visit to see the "Yankalilla Miracle".

The Conference Internet web site is now operating (and working). 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/ or can be accessed through the Australian Skeptics site at www.skeptics.com.au

For further information please see the web-site or contact our Conference Organiser and President of Skeptics SA, Michelle Foster, by e-mailing 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.

* * *

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.

October 7

Nostradamus: Was he wrong?
presented by *moi*.

With the failure of the only prophecy he gave a date for (1999 Seventh month) everyone will at last accept my opinion (developed over the last twenty years) that he really didn't have a clue.

And, the opportunity to say "I told you so" is too good to pass up, so I will be pointing out that the Great King of Terror did not descend from the Sky in July (or September at the latest). I will also be speculating on why so many people actually want the world to end.

One of the penalties of being a Skeptic is being made aware of people with fewer scruples and knowledge about a subject than you have, making a nice little earner of it.

At the end of June, I was contacted by a morning TV program who had been informed that Nostradamus had apparently predicted the world would end that weekend. Having some slight interest in Nostradamus I was able to identify the prediction (not that difficult - it's the **only** one he gave a date for) and it appeared that they would have a few words with me on air on the Friday. Then on the Thursday I was told that the end of the world was off the agenda.

On July 15 I had a funny phone call from a chap over in Victoria who had been impelled by what he had just seen on TV to call me and talk about Nostradamus. (Even I ain't that obsessive about the Nostman.) As those impatient easterners watch their TV before the rest of us, I was then able to catch the segment and found the station had done a Ric Birch on me, and was talking with Victor Baines, head of the Nostradamus Society of America, who seemed less on top of the subject than the interviewer.

Vic claimed that the Nosmeister had been defamed by "malicious misquoting for financial gain by a French author. Pago something or other." Gotta love that research!

Being an American, Victor is not eligible for the Bent Spoon. Maybe we can have a worldwide Erich von Daniken "Without Actually Consulting Genesis" Award for Paranormal Presearch.

It then turned out that Baines has his own book out which explains what the prediction really means. "If the Air war in Kosovo hadn't ended in June it could have meant that. But it could mean September, and if there is a war between North and South Korea, or India and Pakistan, or China and Taiwan, I won't be surprised."

Hardly Robinson Crusoe.



Environmentalism I

A response to Aaron Oakley, "Environmentalism as a new religion" (19:2). It seems to be an inherent human characteristic to categorise people according to predetermined criteria that enable simple generalist assumptions to be made. For example we have Environmentalists, Entomologists, Creationists, Communists, Skeptics, Hindus, Academics, Politicians, Europeans and Golfers to name just a few.

This conceptual modelling or patterning is the basis for much of our cognitive processes and is by no means restricted to the categorisation of people - material and non-material entities alike. This characterisation is a very efficient way of making sense of individual entities by utilising generic knowledge about the group, but only when there is a high degree of consistency in regards to the selection criteria that creates the category.

In regards to people, we are able to make generalisations such as "Entomologists have expertise in fauna with six legs attached to the thorax", or "Skeptics have minds that prefer to analyse the world according to empirical evidence".

Problems arise when one draws conclusions about an individual or group that are not consistent with the original selection criteria: "Entomologists are more likely to be murderers because they drive stainless steel pins through the bodies of defenceless insects" or "Skeptics are without feeling and are arrogant".

Part of the confusion arises because of the dynamic, evolving nature of language and the associated change in meaning of words through time. Also, the 'position' of the user of the language in relation to the context in which a word is applied can change its meaning.

For example, Aaron Oakley's Environmentalism is portrayed as "one area in which uncritical thinking and pseudoscience have a strong presence" is very different from my conception that Environmentalism has a strong influence from empirical science and logical reasoning. Clearly, our two positions in the use of the word is at different ends of a spectrum. "Environmentalism" is a grouping in which heterogeneity of its constituents is increasing, and the original characterisation is losing precise meaning. Aaron's conclusion concedes this to some extent, eg "not all environmentalists are eco-religious folk", but the

Letters

Readers are invited to submit letters on whatever topic takes their Skeptical fancy. We reserve to edit letters for the sake of clarity, conciseness or even sheer bloody mindedness.

overall tone is one that seeks to shift the label of environmentalism closer to Aaron's criteria of enviro-churches and irrationalism.

By the use of subjective language and activation of religious metaphors, Aaron seeks not to be more precise in definition, but to re-categorise the group in favour of his perception. This mode of justification is not consistent with sceptical inquiry and follows a somewhat irrational approach to argument.

Surely a more logical and productive approach would be to increase the definition of the grouping described, or perhaps relinquish the grouping altogether and take the underlying environmental issues on a more case-by-case basis for analysis, conclusion and action. The second approach, in particular, will show Aaron's environmental evangelists (oops, now I'm using metaphors) as the idiots for what they are. However, the larger majority (I think) of reasonable environmentalists will be left untainted by his subjective mode of argument.

Probably the most frustrating issue for environmentalists (of the non-evangelistic kind) is the complete disregard decision makers can have for the empirically derived facts at hand. A tyranny of small decisions that satisfy short term interests and ignore long term consequences has generated real environmental degradation and left the more radical believers of the Green Faith (damn it, there I go again with those metaphors) bewildered and resorting to similarly irrational responses to wake up the politicians and uninformed sections of the wider community.

Another frustration is when there is simply no empirically derived facts at hand (no research), but decisions are being made because the present population can defer the detrimental consequences (assuming there are some) to future generations.

Let's get sensible and stop playing the 'us and them' approach to categorising people too quickly to satisfy our inherent wish for simple generic un-

derstandings - be it Environmentalism, Creationism, Naturopathy or any other "ism" or "ology" that we can think of that has an heterogenous cohort. Let's take specific issues case by case and argue from an informed viewpoint.

However my irrationality would like to thank those radicals who are chained to a bulldozer in a piece of remnant bushland near me ... at least it gives a little more time for common sense and good scientific evidence to be given a second chance.

**Peter Jones
Fairlight NSW**

A response

Peter protests my "redefinition" of environmentalism as a new religion. While my commentary was written tongue in cheek (a point that seems to have been missed), I can say that from my personal experience, many environmentalists (at least of the activist denomination) do indeed abuse science to fit their preconceived ideological goals.

Global warming, nuclear power, forestry and agriculture have all been topics of (mis)information in the hands of organisations such as Greenpeace and the Australian Conservation Foundation.

In conclusion, I hope we can all agree that environmentalism *should* be based on sound science, and that we *should* tackle the abuse of science by environmentalists.

**Aaron Oakley
Nedlands WA**

Environmentalism II

I have just read the forum article "Environmentalism as a new religion" and feel I have to respond in some way. I found it very upsetting. It doesn't seem to be up to your usual standard.

I am willing to accept that some environmentalists treat it as a religion, just as some Skeptics treat scepticism as a religion. My problem is that this article doesn't seem to give any arguments, doesn't quote any instances, no proofs, no figures on what percentages of environmentalists have this attitude. The writer has bad mouthed individuals and organisations without any supporting evidence. It is as if he thinks we already know and agree with his bias.

I'm an environmentalist and I know and communicate with lots of environmentalists. I've never met one who was getting rich on it. I am also uneducated, especially in science. This is one reason I have always read this mag and been a supporter of the organisation.

In Barry Williams article "dialogue with and alien intelligence" he walks the UFO believer through some evidence and questions about interpretations. I need someone to walk me through arguments about environmentalism and scepticism. I notice that Aaron Oakley isn't listed at the back as an author. Is the article just a joke?

David Roby
Alstonville NSW

Determinism

Herewith my reply to David Roche's letter "Biological Determinism I" and Bob Fisher's letter "Biological Determinism II" (*Skeptic* 19 :2).

Roche firstly queries my use of the word "heredity" in my statement "on average about 70% of our behaviour is due to heredity, our genes, as against 30% due to our culture, our environment". He says "heredity is not exclusively about genes". My *Concise Oxford Dictionary* defines "heredity" as "tendency of like to beget like, property of organic beings by which offspring have nature and characteristics of parents or ancestors, genetic constitution of an individual".

Roche then asks what does my above statement mean? It means what I understand was revealed by the Minnesota series of scientific evaluations of the behaviour of identical twins reared under different environments. I can imagine if David Roche had an identical twin, adopted and reared in a non-English environment then that twin could well have a fluency in his native language comparable to David's in English. This fluency would be due more to his genes being the same as David's rather than to his environment. Certainly David's twin would not have gained his fluency by any parental instruction as his parents would not have been there.

Roche seems to verge on the Lamarckian view of inheritance of acquired characteristics when he suggests biological changes due to environmental impact would change the genes that would be transmitted to future generations.

Roche finally puts forward an analogy to argue his case that "trying to find the right balance between biological and cultural determiners is also misguided". Roche states "To claim that one is more important than the other is like claiming that the handle bars of a bicycle are more important than the wheels". This analogy can be used (in reverse) to support my conclusion of the greater influence of genes over environment. I would say that the wheels have a greater influence than the handle bars - we have all seen skilled cyclists riding their bicycles with hands off the handle bars.

Bob Fisher appears to agree with much of Freeman's findings: "I would agree that Margaret Mead's fieldwork may well be pretty suspect." But neither Freeman's book *The Fateful Hoaxing of Margaret Mead*, nor my review of it, presents what Fisher asserts is a "simple debate between cultural determinism and biological determinism". Clearly the book is all about how Mead was hoaxed into confirming her and her Professor's belief in cultural determinism, by two young Samoan women. Freeman puts his anthropological view clearly in his final chapter, *Afterword*: "It is now evident that the way in which [anthropology would evolve] is by the emergence of a new anthropological paradigm in which full recognition is given to both biological and cultural variables and to their complex interactions."

Freeman puts forward a wealth of evidence gleaned over 50 years of research to justify his conclusions. He knew he would need overwhelming evidence to try to convince his fellow anthropologists that their goddess, Mead, had been misled. Anthropology seems a science particularly prone to conclusions biased by tribal culture. Thus there appears to be an American tribe, a French tribe, an English tribe.

Since Freeman published his *Fateful Hoaxing of Margaret Mead* he has found final confirmatory evidence of the hoaxing from a book *All True! The record of actual adventures that have happened to ten women of today*, published in 1931 in New York. It contains an article by Margaret Mead entitled "Life as a Samoan Girl". In Freeman's words "It begins with a wistful reference to 'the group of revered scientists' who had sent her to study the adolescent girls of Samoa with 'no very clear idea' of how she was 'to do this', continues with a vivid description of her stay in Vaitogi, and ends with an account of her journey to Ofu and Olosega in March of 1926. Fa'apua'a and Fofoa, her companions on this journey, she

refers to as the 'two Samoan girls, Braided Roses and Born-in-three-houses,' and she describes how these 'two Samoan girls' (in fact they were both 24 years old, slightly older than Dr Mead herself) accepted the 'great squares' of bark cloth that were presented to her after she had, on Ofu, danced as a *taupou*. She then writes: "In all things I had behaved as a Samoan, for only so, only by losing my identity, as far as possible, had I been able to become acquainted with the Samoan girls, receive their whispered confidences and learn at the same time the answer to the scientists' questions." These confidences were the hoaxes as the young Samoans later revealed.

Freeman in true sceptical fashion has sought the evidence and his conclusions are in no way "replacing one questionable orthodoxy with another" as Fisher claims.

James Gerrard
Kew VIC

Afrocentrism

I am not a member of any Skeptical group yet, but I have enjoyed many learned comments from esteemed professionals on various topics in your journal. I am afraid the quality of writing of my letter may have a dilution effect on this standard. I hope you will focus on the gist of my gripe regarding Mark Newbrook's (MN henceforth, just kidding!) commentary on Afrocentrist views (19:2: 18-23).

First, some declarations: I am an Ethiopian; my views may be sympathetic to the African cause. I am not a linguist. Therefore, I cannot argue with Dr Newbrook's scholarly comments on the linguistic side of Ethiopic writing systems. I will limit my comments to Newbrook's introductory comments.

My first concern is this line: "In its more extreme forms, Afrocentrism includes some extremely 'fringe' theories." Of course it does! If one takes most theories to extreme they become absurd. I am not aware of any ideology that remains valid when taken to extreme. A few times through his article, Newbrook uses the device of putting opinions into boxes of categories to get around detail (note the use of 'fringe' v 'mainstream'). Is it sceptical to consider mainstream theories are more valid than fringe ones? In a journal of fact and opinion, I would have thought the fact that an opinion/theory is harboured by the

masses wouldn't be vital evidence of its validity.

The central question is, I suppose: is there a place for Afrocentric interpretation of past events? That is to say, is it possible that past writers have been influenced by the prevailing opinion of their time as to write biased views of Africa, its culture and its contribution to civilisation? Any reassuring data would be welcome. To answer this question, one obviously needs to research most (if not all) publications by whites/blacks/yellows, etc, that have any bearing on Africans and their culture.

Newbrook's next victim is the African Studies and Research Centre at Cornell. In his own words, the centre's activities are arguably 'fringe-like' (pp 19). One of his concerns was that most of the scholarly work coming from these centres were not critically evaluated by 'mainstream' scholars. This obviously poses a major problem. If 'mainstream' scholars do not involve themselves in such 'fringe' activities as African Studies, how can they be experts on them? If they become experts, they no longer qualify to be 'mainstream'. The other point raised by Newbrook is that: 'departments labelled *X studies* or the like seek to cover too many intellectual disciplines too thinly'. The generalisation made here is staggering. Let us examine the alternative of having departments to cover each discipline in depth. Perhaps the point can be made clearer by using a local example. Suppose I propose to Monash University to have departments for:

Aboriginal Language, Aboriginal Arts, Aboriginal Dream Time, Aboriginal History, Aboriginal Literature, etc. I guess the point is clear. Otherwise I enjoyed his article and the whole issue of *the Skeptic*.

**Soressa M Kiteessa
Sydney NSW**

Which doctor?

In the words of the good Chief Sitting Bull, I have grave reservations about the proposed guidelines regarding the use of witchcraft in NSW hospitals. (*Skeptic* 19 :1, p 8).

As it stands the oncologist is supposed to worry about the effects of oncological treatment, as well as the effects of witchcraft. I think that is expecting too much, for the oncologist should be expected to worry only about his treatment, and not the effects

of the treatment of every quacksalver and witchdoctor as well.

Physicians should decline to treat the patient who insists on medicine and quackery, with something similar to:

Dear colleague in healing¹. Following a recent discussion with our common patient, Mr Gullibility Enhanced, I have decided to cease treating him. Out of professional courtesy I will let you take full responsibility for treating the cancer. Please let me know how the treatment is going.

If the responsibility of treatment rests with the quacksalver then litigation will become common (often after the death of the patient). When witchdoctors are exposed to the courts, then, eventually, there will be restrictions on quacksalvers and witchdoctors. Although courts do not follow scientific rules of evidence, there will be too many dying patients, or their estates, suing witchdoctors because of ineffectual treatment for the State and Federal governments to continue ignoring the large numbers of witchdoctors.

If the physicians, or the courts, do not stop the use of witchdoctors, then soon the physicians will be expected to 'liaise' or 'consult' with witchdoctors. Will the draft policy be examined by officials who will then condone that, with the explanation that it is not tenable not to do so?

Dr Gill will have a hard time trying to reconcile medicine with quackery because one is based on experimental proof, and the other is based on fantasy, together with experimental verification that it does not work. It is known that witchcraft does not work, so it is fugacious to evaluate the 'benefits'.

Dr Kerridge need not be crestfallen just because the approaches concerning witchcraft have not worked so far; make it a condition that the patient decides between medicine and witchcraft and the approach would quickly work. Patients choosing witchcraft would soon die, and those choosing medicine would live. All subsequent patients would soon know to choose medicine.

Because tertiary institutions are now driven by demand from students we have so-called universities offering courses in Ancient Chinese Medicine. The decline in standards of universities is parallel to their decline as an independent arbiter of fact and fiction.

Once universities were part of society preventing the spread of ignorance and superstition. Now some of these third rate institutions are promulgat-

ing its dissemination by teaching Ancient Chinese Medicine and other forms of witchcraft. This problem is compounded by the widespread use of the title Doctor. Once a title conferred by a university to denote a minimum standard of knowledge, the title is now often used by anyone with a 'degree' in witchcraft.

With governments being too lazy, or scared, to control the witchcraft currently being peddled by witchdoctors, it is the duty of physicians to stop its spread, and not by adhering to the proposed guidelines which acquiesce to ignorance. I once thought that the spread of ignorance and superstition was limited after the Age of Enlightenment, but the current 'New Age' movement shows that when the superstition of religion is ridiculed then different rubbish will fill the minds of ignoramuses.

1. It is certainly misleading to address a witchdoctor by terms assuming that they are efficacious, but it is easier to do so.

**(Dr) Anthony Rosler
Elaine VIC**

Fundamentalism

Thank you for a most enjoyable and informative journal. As a recent subscriber, and not being scientifically trained myself, some of the argument passes several metres over my head, but I can still enjoy a good barney.

The anonymous article on "The evils of fundamentalism" prompted me to suggest that your readers may be interested in a new book by Ian Guthridge (an ex-Jesuit priest) called *The Rise and Decline of the Christian Empire*, which in part addresses many of the issues taken up in the article. Ian was a recent guest on Margaret Throsby's ABC Radio interview program. His book is the outcome of many years of critical reading of the Bible, and ends with three appendices that discuss fundamentalism, the status of the Bible as the "word of God", and the divinity of Jesus.

Most of my Christian acquaintances would, I think, argue that the Bible represents an account of the evolution in human understanding of the divine, and that any attempt to read it as a literal account of God's activities is an egregious error. (Some would even argue that this process did not end with the *New Testament*, and that there are subsequent writings that are just as relevant to the process.) I think it would be fair to say that they start

from a position of faith, with belief in the existence of the soul and an after-life as a given, and proceed from there to try to understand how they relate to God on an individual level. (After all, who touched off the Big Bang?)

On a related note, I was particularly taken by a comment made by the *Sydney Morning Herald* writer Hugh McKay some time ago, who remarked that faith could not exist without doubt, but I suspect that for many Christians (especially of the fundamental persuasion) this is too scary a proposition.

**Richard Peter Maddox
Armidale NSW**

Creationism in schools

In his article "The genesis of a web site", John Stear mentioned, almost in passing, that the teaching of creationism as a viable alternative to evolution was "happening now in Queensland state schools". (19:2, p. 36) Similar comments have been made elsewhere. Please don't ask for those references; one just hears these statements from time to time.

As a science teacher for over 20 years in the Queensland state high school system, I find these statements a little curious. Just possibly, they are also slightly misinformed. Where does this idea come from? Some time around the mid 1980s, one of Joh's education ministers was reported as having instructed Queensland state schoolteachers to do what John Stear alleges namely, teach evolution and creation as two competing and more or less equal ideas. Some colleagues can actually remember reading it. While it was hot in the media for a while, I have no memory of it crossing my desk. This is odd given that I was troubled by its message and was basically doing the reverse. (It was at about this time that I read a line which immediately went up near my desk - "scientific creationism - you have to believe it to see it!") This defective directive or whatever it was had no impact on my teaching at all. I am unaware of any other teacher changing what was being taught as a consequence of this DD-notice.

Where do things stand at present? In senior biology, evolution is a compulsory part of the syllabus.

Even private schools, which have a great deal of latitude in the matter of religious education, are required to teach evolution if they are to gain accreditation to assess students in senior biology. This perhaps needs to be restated. In Queensland, the study of evolution is a *compulsory* part of the senior biology syllabus. There is *no* requirement to teach creationism in the senior biology syllabus. Creationism in science syllabi is no more an issue in Queensland secondary schools than in other states.

Without doubt, there are teachers in all states who accept one of the various competing creationist doctrines. However I know of no teacher in the Queensland state system teaching either creationism or a blend of evolution and creationism. I know a few creationist teachers but also quite a few teachers who would describe themselves as convinced evolutionists. Some would call themselves atheists. I'm with the latter group and regard belief in a god as classic wishful thinking and absurd egocentrism on the part of believers.

Religious education (RE) is a different matter. RE involves a variety of outside people visiting the school on a formal basis to try to inform students about religion. A high proportion of such lay-teachers could be described as fundamentalist with respect to the creation-evolution issue. RE classes do not attract remuneration. The people concerned probably see the opportunity of spreading their own version of reality as payment enough. It should be said that not all RE teachers are preoccupied by the creation-evolution issue. However many of the RE classes I have attended have featured, at least in part, a group of students listening quietly while pseudoscientific claptrap was preached to them. Here are three examples from RE classes that for reasons of class supervision I have been required to attend.

(i) The second law of thermodynamics rules out evolution. (Ever since it was presented, this has been shown as an invalid interpretation. For just as long, creationists have wilfully ignored the clear refutations of this objection. They dishonestly continue to use this totally spurious notion so as to influence scientific illiter-

ates. The misquoting referred to by John Stear is another example of such creationist dishonesty.) The RE teacher is usually told after the lesson that he - always a he in my experience - was quite wrong and that the class would be talking about the issue from the scientific approach in the next lesson.

(ii) Scientists do not know much. They still cannot decide whether light is made up of particles or waves. (That light can be both and that the nature of the experiment is crucial are too testing for the average creationist.)

(iii) Scientists are re-evaluating the Big Bang theory. If this is so, then can evolution be far behind? (The concept of science as a process of continual questioning and answering - with answers that are not considered absolutely final or "The Truth" - is fundamentally foreign to the creationist mentality.)

One RE teacher left before the end of the lesson and his offside took over. After the lesson, I had a chat with him and mentioned that his boss did not know what he was talking about, at least with respect to the scientific areas he had covered. "But Mike is a qualified engineer!" "That may be so, but he does not know much science." A few words later he turned on his heel and headed for the school gate. We had a good non-meeting of minds. I have not seen a trace of them since. Probably all three of us are content with that.

A final word. While we Deep Northerners may seem a bit strange, creationism in Queensland schools is not quite the Cause-For-Concern that it may appear. If not in full vigour, evolution in Queensland secondary education IS alive and less anaemic than some believe.

**Roger Scott
Petrie QLD**

Immunisation as a 'Jewish plot'

Australian Skeptics have recently been active in the area of promoting immunisation because of an appallingly low rate of childhood immunisation which in a large part has been bought about by anti-science activists. Fortunately,

Skeptics have been successful in helping reverse this trend and it is hoped that people will continue to positively evaluate the scientific evidence which is overwhelmingly in favour of this procedure.

I had always assumed that the trend against immunisation was a recent phenomenon and a manifestation of the anti-science movement, since, in previous times immunisation was accepted as a "modern medical miracle". In fact, it was widely accepted but I was surprised to discover in my reading that there were isolated pockets of opposition to both polio vaccine and fluoride in water as long ago as 1955. I came across the following piece of anti-immunisation propaganda whilst researching the origin of various anti-Semitic claims unrelated to this matter (and many of which are based on forgeries, mistranslations or out-of-context material and for which I am writing refutations). The following piece was written by a Eustace Mullins and appeared in the US hate sheet called *Women's Voice* in June 1955 in an article entitled "Jews Mass Poison American Children".

One of the most shocking and sadistic episodes in the history of the world is now being carried out in the United States by Jewish mass poisoners of children. Jonas Salk, Yiddish inventor of a so-called polio vaccine, is directing the inoculation of millions of American children with this sinister concoction of live polio germs. All that is known is that it causes polio in an alarming percentage of children injected with it, while its effectiveness in preventing polio is a myth of Jewish propaganda.

Meanwhile, commentator Paul Harvey warns his radio audience of millions of listeners that he is *not* going to have his little boy injected with this poison.

The press prints testimonial after testimonial in *favor* of the Jew vaccine from the filthy immoral rats in the US Public Health Service in Washington, which is nothing but a publicity bureau for Jewish poisons such as fluorine in water. How can they be so heartless as to go on day after day urging American citizens to poison their children with the Jewish vaccine?

The answer lies in the multi-million dollar charity racket known as the March of Dimes, which kept the late demented cripple F.D. Roosevelt in clover most of his life.

Interestingly, on March 25, 1965, ten years after this anti-Semitic, anti-science diatribe was published, US Senator Lester Hill introduced a reso-

lution into the US Senate pointing out that:

1. In the ten years since the Salk vaccine had been introduced there has been a 99% reduction in the number of cases of poliomyelitis.
2. That this dread disease once attacked as many as 57,000 Americans in a single year and made the summer months a time of fear and apprehension for parents.
3. That this victory against polio had been won by a partnership of Dr Jonas Salk, the National Foundation of March of Dimes, and the US Public Health Service.

After Dr Salk's discovery another type of polio vaccine was developed and introduced by Dr Albert Sabin, also a Jew, who had left the USSR for the USA in 1921. This no doubt provided all the proof that the anti-immunisationists needed that vaccination was indeed a Jewish-Communist plot! It also provided an additional problem for anti-Semites who claimed that Jews ran the USSR. Since polio vaccine was also widely used in that country, did that mean that "the Jews" were poisoning themselves and the people they supposedly ruled over? It is therefore apparent that ignorance and bigotry have no bounds. Fortunately, Skeptics tend to only encounter the ignorant, but when both ignorance and bigotry are combined, it makes for a dangerous combination indeed.

(Dr) David Maddison
Toorak, VIC

Idiot's guides

There are a number of useful books around for the computer-illiterate, with general titles *The Complete Idiot's Guide to ...* You can have *The Complete Idiot's Guide to Windows 95*, *The Complete Idiot's Guide to the Internet*, *The Complete Idiot's Guide to Linux*, and similar gems.

These are all useful as an introduction to the topic of the respective titles. Here the word "Idiot" is used in its original Greek sense of someone who is simply ignorant, and not as meaning that the reader is a fool or intellectually challenged.

Recently I walked into a bookstore (which should remain nameless) in Brisbane and was greeted by a rack of books with the familiar orange covers. Closer investigation revealed that I

could, if I wished, buy *The Complete Idiot's Guide to Being a Psychic*, *The Complete Idiot's Guide to Interpreting Your Dreams*, *The Complete Idiot's Guide to Tarot and Fortune-Telling*, and similar unattractive titles.

Now I believe firmly in free speech, and the freedom to publish anything one wishes. But I also believe that consumers have the right to be correctly informed about the nature of any goods on sale. Could we agitate for some form of health sticker to be attached to these books? Something along the lines of "Reading this book will damage your mind", or "The contents of this book may lead to mental idiocy"?

I suppose it was bound to happen sometime: after all, we have imported much worse junk from USA. But I long for the halcyon days of yore, when a bookshop was a repository for books providing factual information or leisure reading. Now there's a thought! Maybe we could press for such books to be moved to the science fiction section!

Ken Smith
Graceville QLD

Sole searching

I was amused by Greg Keogh's report on ConFest at Tocumwal (19:2). I attended a few of these gatherings in the past, where I observed that by far the most common kind of physical distress suffered by the participants was cut feet. Although there were plenty of practitioners of all manner of alternative therapies peddling their wares at the festivals, it was most noticeable that people with injured feet invariably visited the medical first aid tent for relief.

Seems that for the dedicated new agers, seeking souls may be one thing, but salving soles is a different thing entirely.

Mark Plummer
East Melbourne VIC

Humaning the Humourists (or vice versa)

Some comments on John Snowdon's articles in recent issues.

The United Nations' Universal Declaration of Human Rights (1948) was set in broad terminology, emphasising humanism as an embracing need of

the world's people. Obviously, there is some way to go. It took the Australian Government until 1983 to be a signatory.

Often working against prevailing resistance to their efforts, various people, Humanists, Secular Humanists, Religious Humanists and lawmakers in general, use the UNHCR as ethical guidelines, to design practical ethical codes for people of differing cultures.

The Australian Human Rights Commission, and Bureau of Statistics, reveal the extent of Free Thought Humanist influence, that frequently invokes disparaging remarks from religious people, who John Snowdon seems to emulate sequaciously, and who seemingly ignores difficulties faced by the broad spectrum of Humanists throughout the world, and that Humanist ethics are being inexorably embraced by the world's people and governments.

People like John sit back offering non-constructive criticism. They gaze fixedly at a rotten apple on the tree, but not the rest of the fruit. It is difficult to understand what his stance is, as he seems not to have any realistic position of advancement on any ground he covers.

He confuses his brand of freethinking with Free Thought activities. John apparently has been this, that and the other and read this, that and the other, all to little avail except apparently to foster his inertness. What is the real label of this enigmatic, acerbic syllogist with his acrimonious criticisms sliding like mercury irresponsibly over everyone?

Didactic criticism of unethical ideas, and those committing unethical acts, according to the paradigm of Humanist principles, may well be in order and deserved. Voyeur John did not state where his erogenous zone is but notes those of others. Is John implying that Humanists should be homophobic, as he appears to be? John's use of words that many people do not readily understand, and not those that can be readily understood is also a habit of ignorance, and not necessarily an attribute of higher learning. What is his point of indulging in frequent caustic criticism in inappropriate, extravagant sesquipedalian style?

Notwithstanding self appraisal of his native cunning, John appears not to have realised that unlike religious organisations, Humanist do not indulge in competition for Government \$ for providing soup queues and other charity work. Humanists would appreciate receiving government funds. Methods to gain funds from govern-

ments by religious organisations amounting to political blackmail are not in the Humanist book.

Humanists' endeavours try to bring social awareness for change, including abolition of the need for soup kitchens that may sate immediate hunger, but not prevent its cause.

Many Humanists, without heralding their efforts via advertising or the pulpit, quietly go about charity and counselling work for which they receive no profit. Does John hand out soup bowls or give the shirt off his back? Does he not realise that when pointing his critical digit, three are pointing right back at him?

John should read Richard Lead's articles and perhaps enter real higher education. John's efforts to marginalise growing Humanist influence throughout the world with his somewhat tedious critiques are of little concern. Being cognisant of Humanists frailties as he sees them, John may suggest a formula to help create a better world. But most likely his negative rancour will exacerbate with his aging.

Veteran Johnny may be assured, genuine overworked battle hardened Humanists, who with their profound sense of humour, look forward with some amusement to his repetitious claptrap, that represents a dreary zenith factor of his fading arcane opposition faction.

Peter Plane
Clifton Hill VIC

Schizophrenia?

I have a suspicion, born out of *close* experience with schizophrenia, and an interest in cognitive science, that the winter edition of *the Skeptic* inspires me to vent.

The human propensity to find order in chaos, see faces in abstraction (pareidolia), to perceive patterns where none are intended is well documented, and in fact evolutionary theory may be plausibly called on to explain it (see, for example, Carl Sagan's *The Demon-haunted World* p46).

In the mind of the schizophrenic, this proclivity often becomes a compulsion. The sufferer may feel trifling events to be of deep significance, perhaps evidence of conspiracy or of something supernatural, or may become obsessed with the idea that their environment holds coded messages which they have to crack.

Many of the teachings lumped un-

der the New Age banner, starting with numerology, and including the Face on Mars Conspiracy, Reverse Speech and, of course, The Bible Code, bespeak just such schizophrenic thinking.

Reading John Tatter's numerological analysis of a plane crash (quoted in Bob Nixon's article "When is a prediction not a prediction?") and Greg Keogh's transcript of an alien enthusiast's surreal expoundings ("The UFO connection") I feel justified in my assertion that while, as a society, we still tend to shun the mentally ill, many among us, immune to critical thinking, will pay good money for the pathological confabulations of a diseased mind.

Carolyn Shine
Bondi Beach NSW

Fluoride

Michael Vnuk's account of an evening of discussion on fluoridation makes sorry reading (19:2 *Qld Branch News*). To have two speakers known to be pro-fluoride and none to provide the persuasive counter arguments which need to be aired (a number could probably be found in local University Medical Schools) is patently absurd and unworthy of a Skeptical gathering.

The claims for the occurrence of fluorosis, brittle bones, and other subtle effects throughout the body are documented in reputable journals and can't be answered by simple denial. Further, the evidence for the beneficial effects of fluoride is considerably less convincing than claimed (see eg Fluoride 1990; 23; 55-67, *J Can Dent Assoc* 1987; 53; 753-5, etc).

Again, some dentists will, and all should be prepared to, admit that there is no point in swallowing fluoride; it has no therapeutic value beyond the back teeth, so that fluoride toothpaste will do the job at least as well. When it is noted that toothpaste sold in supermarkets (in Dunedin at least) is almost entirely fluoridated it would seem that the fluoride in water is largely redundant in terms of dental health. It follows that the only possible effect for most people is harmful. The morality of medicating a large majority of the population with a low level poison with unpredictable consequences for the supposed benefit of the remainder who don't use any toothpaste is doubtful in the extreme.

About our authors

In fact the arguments for fluoridation are so weak that there has long been suspicion in my mind that a hidden business-cum-political agenda, rather than good science, determined the health authorities' support for it; this suspicion has been deepened by observing the crusading zeal with which the issue has been promoted. On the other hand, it has been observed that it is pointless to look for a conspiracy where stupidity is an equally good explanation. Whatever the rights and wrongs of fluoridation I hope that Queensland Skeptics will be rather more sceptical in future.

Bob Entwistle
Dunedin NZ

Gravity

The letter from John August in the Winter issue (19:2) is unintentionally funny. He says that a pendulum swings slower atop Mt Everest than at sea level therefore there is no such thing as time dilation, only a slower pendulum rate due to less gravity. He is inadvertently proving the principle he is trying to disprove.

A slower pendulum rate *is* time dilation; it means fewer swings per unit of time as measured at sea level. Time dilation can be caused either by acceleration or by *gravity*. According to relativity there is no distinction between the force produced on a body by gravity and the force felt by an accelerating body. This is the Principle of Equivalence and is the idea that led Einstein to the Theory of General Relativity. So time goes slower atop Mt Everest because of the decreased gravity. Newton's laws do *not* make that prediction. Of course in reality a pendulum is too insensitive to show such a time difference, but there are other "clocks" that can show it.

It always amuses me when people think that they have found flaws in theories produced and proven by some of the best minds that have ever existed. Creationists do the same thing with respect to evolution, which they regard as "not very intelligent". In other words they think they are smarter than the thousands of highly educated, intelligent and accomplished scientists who have devoted their lives to the study of concepts like relativity and evolution. For someone to measure himself against an Einstein is hubris of the nth degree.

(Dr) Robert Hanan
Runaway Bay QLD

Richard Cadena is a member of the Vic committee who does strange things with computers when not writing for *the Skeptic*. He is also an American, for which he is forgiven.

Dr Scott Campbell, philosopher, is shortly to return to the NSW committee from a year-long term at London University.

Trevor Case, vice-president of the NSW committee, is the original Skeptics Eureka Prize winner, and is completing his PhD in psychology at Macquarie University.

Rafe Champion, author and renaissance man (though he doesn't look that old) is a member of the NSW committee.

Dr Geoffrey Chia is a cardiologist in private practice in Brisbane, who believes the solutions to energy problems lie within our grasp, if only the economic and political will existed to solve them.

Jane Curtain is a linguist at Monash University and is one member of the Vic committee who is not afraid of ghosts.

Dr William Grey, philosopher, teaches remedial virtue and metaphysics at the University of Queensland.

Dr Colin Keay, is either an asteroid or an astronomer and his orbit centres on the Newcastle region.

Richard Lead is the NSW treasurer. His name is pronounced like the very dense element, not like the word that indicates some charismatic ability to attract followers. You shouldn't read any significance into this.

Justin Lipton is back in Australia after a year living and working as a physicist/electrical engineer in Jerusalem. He is not sure how he came to be there or what he was doing. He is sure that he is confused.

Dr David Maddison is a physicist specialising in materials science. He lives in Melbourne, poor chap.

Tim Mendham's creatively compiled cryptic crosswords cause considerable confusion among the cognoscenti.

Dr Mark Newbrook is also a linguist at Monash and is also a member of the Vic committee, though we don't know his reaction to ghosts.

Bob Nixon, who has just been appointed Investigator-in-Chief to *the Skeptic*, is a business analyst and a member of the Vic committee.

Prof Ian Plimer is a geologist of international repute, not all of it ill. His battles with irrational claims of all stripes are legendary.

Dr Joe Proietto is Associate Professor of Medicine at the University of Melbourne, Department of Medicine, Royal Melbourne Hospital.

Dr Steve Roberts is a contributing editor to *the Skeptic* and knows all about stars and stuff.

They say that **Rosemary Sceats**
Inherited the mantle of Keats
But however you credit 'er
Her scansion beats that of the Editor.

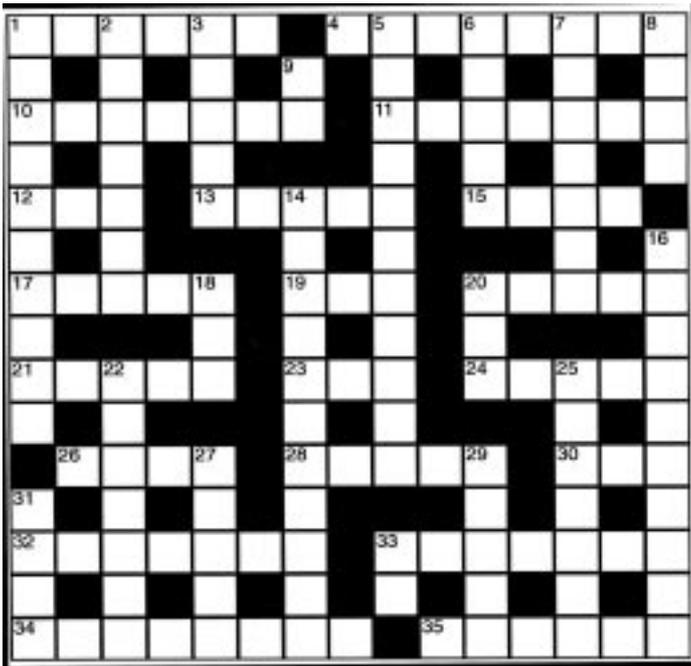
Dr Ken Smith, mathematician, recently retired from the University of Qld. He hasn't been busier.

ffred Thornett is the man who put the mania into Tasmania and, as its secretary, keeps the Tas committee from falling into deep depression.

Barry Williams, boy editor, is off on an overseas ~~junk~~ trip, Tra la!

Dr Neil Woodger is both a clinical psychologist and the President of the ACT Skeptics. We believe that to be a singularly appropriate juxtaposition.

The Skeptic Cryptic Crossword No 4 - Spring 1999



Return to: Skeptic Xword
PO Box 268, Roseville 2069

Name _____

Address _____

Entries will not be opened until October 31 and the first correct entry opened will be adjudged the winner. The prize will be a copy of one of the books listed inside the front cover.

Across

1. Skeptic of the Year has a point. (6)
4. Lost land? Blame points at Stalin. (8)
10. Emu trapped in messy lair in mythical land. (7)
11. Free Idi and make him concrete. (7)
12. I am in the Netherlands - there's nothing here! (3)
13. Parapsychologist is a river to his people. (5)
15. Put one in 12 across - that hits it on the head. (4)
17. & 5 down. A creature from outer space, or just one more earthling? (16)
19. Not in Oxford University Trust. (3)
20. Your mother's smell, add an elephant - it's verbal nonsense. (5)
21. Northern culture is not north-west nor the opposite. (5)
23. Jedi's sash? (3)
24. Divining cards attributed to art. (5)
26. Vehicles probably powered by energies unknown to science. (4)
28. Diamond gal has current bloomer. (5)
30. Throw the net back for X. (3)
32. Subjects with the right to be hot zones. (7)
33. Warlike from Mars. (7)
34. Bad baseball batter has no foundation. (8)
35. Site of hauntings in tomb or ley line. (6)

Down

1. Anna in latest hope that residents of 4 across can hold their breath. (10)
2. Went often to Arthur's home? (7)
3. Make a mistake or make a mistake. (5)
5. See 17 across.
6. Does ET have a right to hold property? (5)
7. Medieval course of study reveals a single piece of useless information? (7)
8. Marquis of the unhappy east? (4)
9. God hanged in the academy. (2)
14. Toss laconic statue smashers about. (11)
16. English garden with fairies at the bottom. (10)
18. Consumed tea, badly. (3)
20. A just word is a right word is a French word. (3)
22. Shares that a rational person might have. (7)
25. Three in real new test. (7)
27. Plies his salesman's pitch. (5)
29. Transport to leave freight - a good start for a cult. (5)
31. Impale on upturned cricket implements. (4)
33. Directionless muse in a strange land. (2)

Solution to Crossword No 3



The number of entries in the competition continues to overwhelm with increasing frequency, to such an extent that by the middle of the next century we expect it to lead to a paper shortage and the decimation of forests (or not).

This competition's winner of a copy of Richard Dawkins' *River out of Eden*, is Russell Dann of Grange, SA. Well done Russell, your prize is in the mail.

By an extraordinary lack-of-coincidence explicable only by non-conspiracies of monumental proportions, the Crossword competition has never yet been won by more than one person from any one state. Amazing!

**Planning to go?
Please let us know.**



the Skeptic



Don't leave home without it.