

the **Skeptic**

Volume 14, No 3

Spring, 1994

controversial convention issue



Is this dog psychic?

Medical Myths?
Nuclear Myths?
Memory Myths?
Greenhouse Myths?

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From the President

I would like to apologise to all our readers for the tardiness of this issue, which was largely caused by the decision my family and I made, earlier this year, to extend and renovate our home. As a result, I can now modestly claim to be an authority on chaos theory.

I hope that readers will find the wait worthwhile as we have published several of the papers presented at the National Convention in Sydney in June, some of which may well cause a degree of controversy among our readership. Certainly, it should be one of the aims of a sceptical organisation, to question any issue in which the arguments used rest upon a basis of scientific evidence, and more importantly upon interpretations of that evidence. Controversy, therefore, should be no stranger to a sceptic.

One of the purposes of *the Skeptic* is to provide a forum for our subscribers to question popular beliefs and although it is clearly stated in each issue that the opinions expressed in articles are those of the individual authors, and are not necessarily those of Australian Skeptics, it probably bears reiteration here.

It is not a refereed scientific journal and it is open to every reader to question anything that appears in its pages. That is the right and the role of a sceptic. On the other hand, we will argue vehemently against any suggestion that we have no 'right' to publish articles that may challenge someone's shibboleths. That is not scepticism, that is censorship and censorship is, in my opinion, a very dangerous principle for sceptics to espouse.

Barry Williams

the Skeptic**Vol 14, No 3****ISSN 0726-9897**

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**NSW Branch
Dinner**

The NSW Branch will be holding a dinner to celebrate the impending demise of the year 1994, to which all subscribers are invited.
 The details are as follows:

The Crows Nest Club
33 Hayberry St
Crows Nest

Saturday
November 19

7.00 for 7.30

Cost \$28.00 per head

RSVP ASAP but NLT Nov 14
With cheque to:
PO Box A2324,
Sydney South, 2000

or late bookings to
Ph (02) 417 2071
Fx (02) 417 7930

The committee is negotiating to provide a guest speaker and the details will be announced before the event.

**VIC Branch
Functions**

A meeting will be held

Tuesday
October 11

Poyntonz Hotel

Grattan & Cardigan Sts
 Carlton
 8.00 pm

Special guest speaker, Colin Goodwin, former Catholic priest will speak on "Creative Atheism"
 Cost \$5.00
 Dinner is available in the hotel from 6.00.

Sunday
October 23
Dinner

Will be held to celebrate the 5,997th anniversary of the divine creation of the earth, the universe and everything. A special guest speaker will be arranged, if he returns from overseas in time.

Cost \$25.00 per head

Please indicate your early interest by phoning (03) 850 2816 ASAP, at which time the venue will be confirmed

Editors: Barry Williams
Harry Edwards

Subscription:
1994 - \$25.00 pa

the Skeptic is published four times per year by the National Committee of Australian Skeptics Inc. Views expressed in articles and letters are those of the authors and are not necessarily those of the National Committee of Australian Skeptics Inc. Articles may be reprinted with permission and due acknowledgement to *the Skeptic*.

News and Views

Edited by Barry Williams

Four new Life Members of Australian Skeptics were announced at the National Convention.

Joe Rubinstein, an engineer, was the original Treasurer of the Skeptics when the organisation was founded in 1980 and remained in that position for more than five years.

Dick Champion is the present Treasurer and has held the position for more than seven years. Dick is an emeritus Professor of Psychology at Sydney University. It is a tribute to these two great Skeptics that they have kept the organisation solvent throughout its life and kept hotter heads from spending more than we earned. It probably also says something that neither of these gentlemen has ever had any connection with the financial sector.

Peter Hogan has been a member of the National and Victorian committees since the beginning. A science teacher, Peter the “quiet man” of scepticism, has always been available to work at any function and to carry out any task. He edited the book *Creationism: Scientists Respond*, which has been a best seller for the Vic Skeptics.

Harry Edwards, far from being a quiet man, has been National Secretary, Associate Editor, Chief Investigator and inveterate writer for over seven years. A retired builder, and as his story in this issue reveals, a onetime secret agent, Harry is one of the most active and dedicated of all Skeptics. He is also the butt of some of my most outrageous slanders and has not once threatened me with the law (violence yes, the law, never).

To these gentlemen may I express my personal gratitude and warmest admiration. Australian Skeptics continues to be successful because of the work that you have done and the dedication you have shown. Thank you.

There is nothing quite like a great

astronomical spectacle to bring the mystics out of the woodwork.

The recent event when comet Shoemaker Levy disturbed the Jovian atmosphere is a case in point. A British seer claimed that the comet was in fact Halley, which surprised astronomers. Simon Turnbull of the Australian Psychic’s Association made some really daring astrological predictions of the “the economy will improve; Australians will make some medical breakthroughs; Wednesday will continue to precede Thursday” type.

A Nostradamus expert from the USA even decided, well after everybody else was aware of the potential event, that the great seer had predicted just this cataclysm in one of his impenetrable quatrains.

Interviewed on *Real Life* (Channel 7) with this expert, I claimed that William Shakespeare was a far better prophet than Nostradamus, citing “Friends, Romans, countrymen, lend me your ears” as predicting all the Italian fans tuning in to the World Cup final (which happened the night after the interview) and “Oh, that this too, too solid flesh would melt” as referring to a then current scam offering a cream that would melt fat from the thighs of gullible purchasers.

This gave us an idea for a competition for our readers, and one that gives you a chance to prove yourself to be an incredibly astute interpreter of some of the great prophets of the past. All that is required is a Dictionary of Quotations and a fertile imagination.

Send us one or more quotations from anyone famous and tie it in with some event that occurred recently. The best responses will be published in the next issue and the entry judged by the editorial team to be the most original will win a one years subscription or a copy of our book, *In The Beginning*.

Entries to be received no later than November 10 (which just happens to be the Editor-in-Chief’s birthday).

* * *

Did the Earth move for anyone at 9.00 pm on Sunday, August 21?

George Richards who compiles *Column 8 for The Sydney Morning Herald*, sent us some information that he had received about “Earth Alignment Day”, which was being conducted at Wembley Stadium, London.

On that day, ten thousand people were expected to attend the famous home of Rugby Union and at Noon (GMT) were requested to unite in a “combined OM (AUM)”, lasting for eight minutes. We don’t know why OM is also shown as (AUM), nor do we know why eight minutes is such an important time, and the literature does not seek to explain these mysteries.

The brochures invited “lightworkers” [employees of the Electricity Commission?] around the world to join in at local times commensurate with 12.00 GMT, the purpose being to “...allow the earth to birth gracefully into her alignment with the new incoming higher frequencies and reduce dramatically the need for major geophysical cleansing to bring about this transmutation and balancing”. To achieve this they will “...create a great vortex reaching down into the grid structure (ley lines) of the Earth - to carry the Sacred sound out for thousands of miles, magnified by the quartz crystals”. Attendees are advised to “... clean your crystals the day before (soak in Sea salt water is one way).” The whole thing was promised to be “A day of upliftment and positivity for all present”.

Clearly a very important event and we are certain our geologists and physicists will be intrigued by the insights into their professions as shown in the brochures.

And we are a little bemused about cleansing our crystals in sea water. Sea water around our coast-lines is likely to be a wee bit polluted, so perhaps the crystal purifies the water and the water purifies the crystal. If this is the case, which comes first?

One question remains, however. Why do the denizens of the New Age think they can solve all the world's problems while at the same time degrading the English language into meaningless mush?

* * *

It is not the practice of *the Skeptic* to make predictions, preferring to leave that to those who have a clairvoyant pipeline into the future. A recent report in the press of some mysterious lines appearing on satellite images of the Nullarbor Plain has, however, convinced us to chance our arm at the psychic game.

The images in question, which were taken in 1992 and not viewed by the CSIRO Division of At-mospheric Research until recently, showed five parallel lines, some 400km in length and 10km in width, crossing the Nullarbor.

The newspaper article claimed that similar features are known to geologists but are usually most prominent in images taken at night, using infrared imaging and are far less prominent in daylight. The Nullarbor lines are, however, very different in that they appear in daytime images and do not appear in pictures taken at night. Scientists, as they say in the best tabloids, are baffled.

What a scenario for the purveyors of mystical theories. And this is where *the Skeptic* will make its daring predictions. Within one month of the publication of this issue, some UFOlogist, New Age nut or religious looney will reveal that these images are either:

a. landing fields for extraterrestrial craft (which presumably have very poor brakes, hence the extreme length);

b. crop circles that unwound themselves;

c. pointing directly at the Face on Mars;

d. a message from the Mother Earth, telling us to stop destroying the rain forests;

e. a sign that The End is Nigh;

f. a secret conspiracy to bring about One World Government.

In our view, the most likely explanation is that all those people going OM (AUM) at Wembley, caused the Earth's crust to crack.

* * *

Coincidence is often used as an explanation of seemingly inexplicable events, the less sceptical of our fellow citizens even claiming that they have mysterious underlying significance. Recently I experienced one that would have the myth-mongers rushing to their esoteric texts to seek an explanation.

I was having a coffee break with a colleague near my office. The conversation drifted, as conversation does, to the ephemeral nature of fame, especially as applied to sporting heroes. I opined that few of today's greats in sport would be remembered by any but the dedicated aficionado in twenty years time and that it fell to only a very few to be remembered by the population at large, long after they had ceased to exercise their particular skills.

We nominated Don Bradman, Les Darcy and Dawn Fraser as falling into that category and were scratching our heads to see who we could possibly add to the list. As we sipped our coffee, who should walk past our table but Dawn Fraser.

A classic coincidence, but if anyone can see any underlying significance in the event I will be astonished.

* * *

As we have often said in these pages, pseudoscientific beliefs can sometimes be dangerous. The reduction in the number of children being immunised attributable, at least in part, to the proliferation of 'alternative health' crackpottery, has led to the appearance once again of epidemics of whooping cough and measles in Australia. Children (and adults) are becoming very ill and several have died because of these infections in the past few months. Meanwhile, as if to emphasise the superiority of medical science over New Age superstition, medical journals are reporting that if no cases of polio myelitis are reported within the next two years, it will be regarded, along with smallpox, as an extinct disease.

* * *

Following this story and our awarding of the Bent Spoon for 1994 to the Attorney General (see story this issue), we were even more distressed to see in an advertisement that the Government Employees Health Fund is now offering cover for a whole range of 'alternative therapies'.

* * *

Marian Wheatley of Parramatta has sent us yet another copy of the St Jude chain letter (we ran an article on it about three years ago).

This one followed the usual formula and promised good luck to those who passed it on and asked for no money. It differed from previous versions we have seen in that it was hand written and seemed to be missing some of the lucky people mentioned in earlier editions. One that was retained, an RAF officer, seems to be getting luckier with each retelling of the story. In the first issue we saw, he won some \$70,000. Now it is \$70,000,000, so it seems inflation even effects St Jude.

Speaking of whom, does anyone among our erudite readership know who St Jude was (apart from the obvious answer of being the Patron Saint of the Beatles)?

Following an article by **Colin Keay** (Vol 14, No 1) on a TV antenna advertised in *The Open Road*, the journal of the NRMA, **Stephen Heydt** of St Ives wrote to the motoring organisation, asking what precautions they took to ensure that products advertised in their magazine were legitimate.

Flavia Abbate, Marketing & Promotions Manager of the NRMA responded to Stephen with a letter, the relevant parts of which are reproduced below:

“All of us at *The Open Road* read your letter and attached article with great interest and appreciation. We can only agree with your point of view about responsible publications being more discerning with accepting advertisements.

You’ll be pleased to know that due to circumstances similar to that of the antenna product, our Advertising Manager ... has formulated an ‘Advertisement Standards’ regulation which is being enforced with current advertising bookings.

NRMA’s Technical Services Division which screens and tests any motoring related products to be advertised in *The Open Road*, now has the additional responsibility of screening and assessing any product with dubious functions and claims.”

This is a very pleasing result for Colin, Stephen and *the Skeptic*. It’s nice to know that we can make a difference, and Well Done to *The Open Road* for its responsible attitude

* * *

Congratulations to all our successful Commonwealth Games athletes and particularly to Steve Moneghetti who won the Gold Medal in the Marathon.

Steve was involved in a display of fire walking organised by the Vic Skeptics earlier this year and his presence was instrumental in the large amount of publicity the event obtained. Clearly the ‘heat treatment’ Steve’s feet obtained on the night had no deleterious effect on his renowned running ability.

During the Convention, the Skeptics engaged in a debate with two members of the Australian Psychics Association on the topic “That There is Reliable Evidence for the Existence of Psychic Powers”.

As would be expected in a debate of this nature, the pro side produced little other than anecdotal evidence to support their case, and the main interest focused on a side bet between Vic Skeptics president **Adam Joseph** and Aust Psychics president, **Simon Turnbull**. Adam, who was video taping the show, said that he would concentrate on a word during the debate and challenged Simon, who claims some ESP powers, to nominate the word at the end. Not a very scientific test as we are sure you will all agree, but it did inject a little more interest into proceedings.

At the end, Simon said that he had been receiving visions of a ‘grape’ or ‘grapes’. Adam said that he had been thinking of the town where he had grown up, Mildura. Simon was making the usual psychic’s excuses about it not being a totally consistent talent, when **Barry Williams** (a proponent of the nay case) light-heartedly pointed out that as Mildura was a grape growing and wine producing area, Simon could claim a hit. This was merely to show that a sufficiently flexible brain can make connections between any two events, a tactic used frequently by psychics to give credibility to their usually inaccurate predictions.

That would have been the end of the matter, except that someone (we wouldn’t even like to guess who) passed a somewhat coloured version of the story to the *Daily Telegraph Mirror*, which ran the following par in its *Between the Lines* column of June 17.

“Sydney Sceptics were forced to eat their words last weekend when their national convention invited a group of psychics to debate their alleged powers. Nearing the end of the debate, one sceptic challenged psychic Simon Turnbull to ‘read’ a word he had secretly written and was now thinking of. ‘I’m getting grapes,’ Simon responded. The message was unfolded

to reveal ‘Mildura’ - a wine growing town almost completely surrounded by guess what.”

The story made no mention that Simon Turnbull appeared to be unaware of the grape growing status of Mildura until informed of the fact by the Skeptics’ speaker. Nor of the fact that he was making excuses for his failure to guess correctly. As for the Skeptics having to “eat their words” the event only confirmed us in our view that, to a psychic’, any evidence is taken as being supportive of his case, regardless of how tenuous the connection might be.

* * *

Dedicated Co-editor, Harry Edwards puts a few things straight.

At the recently held Australian Skeptics National Convention, I was approached by a reader of *the Skeptic* who drew my attention to my article “Volunteers wanted...” (Vol 14 No. 2), and raised a query about the handling and licking of red-hot metal. While he accepted that the skewering of one’s non-vital parts was not a paranormal phenomenon he could not accept that the others were tricks. This brief item is in response to that query.

There are three principal modes of heat transference - convection, radiation and conduction. The first mode we are not concerned with, in the second and third, the transference of heat can be reduced or blocked by interposing a poor conductor or a non-conducting material. Thus a fire-man wearing an asbestos suit may enter a burning building immune from the searing heat, a sun-block will considerably reduce the harmful effects of the sun’s radiation, and you can safely pick up a hot utensil provided it has a plastic handle. In each case between the heat source and the sub-ject is an insulating material.

By now most readers will be familiar with the Skeptics’ firewalking demonstrations and the ease with which one can walk across hot glowing coals without getting burned - provided one doesn’t dilly dally on the way. This is

partly due to the Leidenfrost effect: the presence of a thin layer of water vapour (a poor heat conductor) from moisture on the feet, either from sweat or from damp material around the coals. The same adaptation of protective insulation in varying forms applies to the handling and licking of hot metal.

Throughout the history of entertainment there have been many performers who have astounded their audiences with seemingly impossible and dangerous feats involving red-hot metal, molten lead, and the ingestion of stones, broken glass, acids and poisons.

How they accomplished them is simply explained - an elementary knowledge of physics, illusion, trickery, insulation and of course - a lot of guts! It must be borne in mind however, that those who chose to earn their living by this means were dedicated professionals prepared to take risks for money, and although some of the methods that were used in the past are explained here, I don't take responsibility for any reader who decides to experiment - trust me!

Licking a red-hot poker

Unlike firewalking, the natural saliva on the tongue is barely sufficient insulation to prevent burning, the tongue must therefore be artificially insulated.

This can be achieved in several different ways. One recipe is to rub the hands, mouth and tongue with pure spirits of sulphur which burns and cauterises the epidermis, this has to be repeated until the tongue becomes as hard as leather.

Another is to anoint the tongue and lips with liquid storax which makes the tongue immune to heat. The mouth should be washed out thoroughly afterwards to prevent any after effects from the balsam. (Storax is a gum resin obtained from certain trees of a family *Styracaceae* especially *Styrax officinalis*)

Biting red-hot iron

Teeth with their hard enamel covering, are natural insulators, and with the lips protected as described above they should be safe from burning. However, a word of caution from Harry Houdini

who once said, "Do not bite a piece of red-hot iron unless you have a good set of teeth."

Holding red-hot iron

The hands will be unaffected if petroleum jelly is smeared on them. The resulting hissing sound when the hot metal touches the jelly is most impressive. Other formulae include a combination of hollyhock and egg white applied to the hands and then rubbed with alum and brimstone beaten into powder.

Walking on red-hot iron

This feat was popular back in the eighteenth century and the mixture consisted of camphor, aqua-vitae, quicksilver, liquid storax, and powdered hermetis applied to the feet.

Applying a flame to the body

Even without any special preparations fire may be applied to parts of the body without any risk of burning - provided you keep the flame moving. This was demonstrated by Indian Skeptic B Premanand when he visited sceptical groups in Australia in September 1991. It should be noted that in the case of hand held objects they are not held in the one hand all the time, they are tossed from one to the other.

An example of handling something red-hot has probably been demonstrated by most of us without even giving it a thought - who hasn't at some time licked their fingers and then picked up a red-hot barbecue bead to drop back into the fire?

Nobody would deny that licking, biting and walking on red-hot metal are all gee-whiz, but paranormal they are not.

* * *

Despite Harry's dedication and obvious research of these matters, we have no evidence that he has put any of his claims to a personal test.

In the absence of this, the Other Editor strongly urges the readers **NOT** to try these practices at home.

* * *

In recent issues, **Kathy Butler** and **Harry Edwards** have written about the promotion of Therapeutic Touch as a healing technique and have referred to the work being done by our colleagues in the Rocky Mountains Skeptics.

We have now heard from **Bela Scheiber** of RMS that the University of Colorado has conducted an investigation into the teaching of TT in its School of Nursing and has found that there is no valid scientific evidence to support the technique and has recommended that scientists and engineers be invited to investigate the matter further. The university did, however, agree that in the interests of 'academic freedom' the teaching could continue.

Bela is quoted in the *Rocky Mountains News* as saying that it is "a good start" and that it bore out what RMS had been complaining about for 21/2 years.

Meanwhile, here in good old Oz, we have noted that Southern Cross University at Lismore is advertising a Bachelor of Medical Science (Naturopathy) course. According to the ad, graduates will be proficient in "massage, nutrition, phytotherapy and homeopathy". We looked up phytotherapy and found that phyto refers to plants.

We were bemused as to whether this therapy meant treating patients or treating with plants. (Massaging a melon or massaging with a melon?)

Prof **Nik Bogduk** of Newcastle Uni Medical School put us straight. It seems it is an upmarket word for herbalism.

* * *

the Skeptic offers its heartiest congratulations to long-time Skeptic and occasional contributor and legal adviser to this magazine, **Nick Cowdery QC**, who has just been appointed Director of Public Prosecutions for NSW.

Nick, who was prosecutor in the case, was represented in the ABCTV programme **Joh's Jury** by Graeme Blundell, who first achieved fame as the sex-crazed teenage eponymous hero of *Alvin Purple*. Nick claims that this fact is totally irrelevant. ■

CONVENTION REPORT

A G Wins B S

Barry Williams

The following is the text of the announcement of the winner of the 1994 Bent Spoon Award, presented annually to the “Perpetrator of the most preposterous piece of paranormal or pseudo-scientific piffle”.

A few weeks ago we were in a predicament. Oh, there was plenty of paranormal pap being perpetrated by the usual suspects. The weekly journals were filling our minds with the banal prognostications of various psychic pundits; the television was pumping out the usual one-sided dissertations of the “Shock Horror Aliens Are Among Us” kind; the radio stations were filling our weekends with advice from the sorts of people you wouldn’t seriously ask for directions to the Post Office. In other words, everything was normal.

Which posed a problem for Australian Skeptics. Amid this plethora of low grade psychic babble, where was the outstanding candidate who would be a worthy recipient of our prestigious Bent Spoon Award?

So bad was it that the best argued suggestion came from one of our readers who nominated Australian Skeptics itself, because, he claimed, we had debased the currency of the award in last year’s presentation to Tonight Live, which seemed to actually want it. I must say that this suggestion betrayed a certain charming naivete in our correspondent, who seems to have a strong, but probably misplaced, faith in the dispassionate faculties of the committee that decides the winner. The only thing I will say to this suggestion is “Mark Avery, we know where you live”

So we sent out a plea to our readers for worthy nominees and several suggestions came in:

Time Life Books for promoting uncritical series on mysteries and UFOs;

The Hobart *Mercury* for publishing pro-paranormal stories and for threatening “never to speak again” to our Tasmanian reps for challenging them;

Radio 2UE for the psychic advice it offers on weekends;
New Idea magazine for doing what *Womens’ Day* had won the award for three years ago;

Adam Joseph, our Victorian president, came up with Mr Demarquez, a Frenchman living in Cairns, who had written a book about being abducted to a distant planet, That was OK, but nothing really special and very few people had ever heard of Mr Demarquez.

We were beginning to despair. We were even considering the suggestion of Ian Plimer, to give a special award to our old friends the Creation Science Foundation for “A lifetime

of service, dedicated to the promulgation of ignorance”. Ian vowed that he would walk across hot coals naked if we would vote for that suggestion.

Then we received a nomination from a reader, Andi Stevenson, who lives near Swan Hill in Victoria. She nominated Dr Jonathan Grey, who claims to be an archaeologist and who has been touring the outback with his show, based around his ‘discovery’ of Noah’s Ark. This was looking better, but yet again a problem arose. Only two years ago we awarded the bent Spoon to ‘Dr’ Allen Roberts for his discovery of Noah’s Ark. And, as it appears that ‘Dr’ Grey may have discovered the same Ark, we didn’t want to set a precedent. After all, if all one needed to do to win this prestigious award was to zot off to Turkey and rediscover Noah’s Ark, then it would become rather predictable. Quite obviously such a precedent would bring the Bent Spoon, and our committee, into disrepute. People would claim bias and would no doubt report us to the Anti Discrimination Commission or ICAC or some such body.

This story then took on an intriguing new twist, when the Swan Hill Council decided to put on a civic reception for ‘Dr’ Grey while he was in town. **Now** it became interesting. Here was an elected body, using rate payers money, to honour one of the multitude of discoverers of the ubiquitous Ark. Government action at its very best.

In a secret hook-up, using encrypted telephones, the committee members discussed this nomination. It rapidly moved into hot favouritedom. But still a niggling doubt persisted.

Swan Hill is probably a very worthy municipality, deserving of every honour that can be heaped upon it. No doubt it a spot of rare and wondrous beauty and the preferred holiday spot for those benighted citizens of Melbourne who feel the need to get away from it all.

But the problem remains that few citizens outside Victoria would ever have heard of it. Nevertheless, in the absence of a better alternative, Swan Hill looked set fair to receive our accolade. But then fate, in the guise of Brisbane City Council, took a hand.

Dr Ken Smith, of Qld Uni, sent us some newspaper clippings from the *Sunday Mail*. It seems that Brisbane City Council, in a spirit of multicultural political correctness, had decreed that in any new development within its city limits, street numbers were to exclude the number 4. This, it averred, was because “Asian” buyers of houses were loathe to move into homes containing this number.

And it was not merely the number 4 on its own, but any number that contained 4, so 14, 24, 34 and all the forties would be out. And real estate agents were quoted as saying that “Asian” buyers were disturbed by such numbers as 22 and 31 because the digits added up to 4.

Now I presume by Asian, the BCC was referring to people of Chinese extraction, although why Asian is politically correct and Chinese is not is beyond me. We have heard from Ron Evans, in an article in *the Skeptic*, that many Chinese people consider 4 to be the number of death. However, I have friends and acquaintances from India, Pakistan, Malaysia, the Philippines and other parts of Asia, who have as much (or as little) right as Chinese people to be described as Asian, but who have no superstitious fear of the number 4 at all. They may well have superstitions about other numbers, but not 4. (I have learned since the Convention, that the words for ‘4’ and ‘death’ are homonyms in in one Chinese language. Thus it would appear that this superstition stems from linguistic, distaste, rather than perceived bad luck. **BW**)

And come to think of it, if we checked the numerical superstitions of all of the dozens of cultural groupings residing in Australia, I have no doubt that every single digit in our decimal system of numbering would be offensive to somebody. And if you really want to be both politically correct and consistent, you have to be fair to everybody.

So I envisage a future Australia in which there are no street numbers at all - everyone living in *Emoh Ruo or Dunroamin*. Mind you, it would present a bit of a problem for the emergency services. Call the ambulance because you are having a heart attack “Come to Victoria Ave”, you cry. “What number”, she says. “No numbers”, you will say, “but **I’ll** be the bloke lying in the middle of the Ave, clutching his chest”.

Needless to say, the citizens of Brisbane were outraged by all this as a full page of letters to the editor of the Sunday Mail attested.

But back to the Bent Spoon. This then was truly a worthy nominee. Brisbane is not a rural Victorian hamlet, but Australia’s third largest city. Not only that, unlike Sydney and Melbourne which contain a plethora of local municipalities, Brisbane City Council runs the whole shebang. It is by far the largest municipality in Australia - it has a larger budget than Tasmania. And Brisbane City Council was writing one particular cultural superstition into its ordinances.

Brisbane rapidly shot to unbackable odds as the hot priced favourite. It was going to be the nearest thing to a dead cert since the Yanks poisoned Phar Lap.

But still I nursed a barely formed disquiet in my manly bosom (who writes this stuff?). I mean, to those non-Queenslanders reading this, isn’t this just the sort of thing you would expect from the Brisbane City Council? It would not really be a surprise to us. Would it?

But then, just as despair was about to claim me, there came to the rescue that very body to whom everyone turns when all is lost. In those darkest hours before the dawn, when all seems to be hopeless, to whom do we turn to provide light

and succour?

Of course, you all know the answer. The Federal Government!

Yes, that wonderful body who, in its anti-discrimination guidelines to its employees, has suggested that if you want to invite one of your colleagues out for a drink after work and you don’t invite everybody in the workplace, you are guilty of discrimination.

But then isn’t that what you would expect from an organisation that chooses to reside in Canberra? But it is not the entire Federal Government that is the nominee for the receipt of this award. It is but one of its many arms and the tale only came to light a short time ago.

In a story that received scant coverage in the metropolitan media, the Attorney General’s Department announced that it had reached an enterprise agreement with its 2,400 employees.

As part of the deal, the department had agreed that any employee, who had taken sick leave, need not provide a medical certificate signed by a medical practitioner, but could provide one signed by a naturopath, herbalist, iridologist, chiropractor or one of assorted other “alternative” practitioners.

“Hang on” I hear you cry,” could this be the same Federal Government who, through another of its multitudinous arms, the Health Department, is planning to spend a few millions of our dollars on an educational programme to encourage people to adhere to the suggestions of medical practitioners and immunise their children. To ignore the blandishments of those very alternative practitioners it is now embracing?”

“Too right,” I reply “you can bet your life it is.”

I leave you, my fellow taxpayers, with this sobering thought. The laws of Australia are being administered by an organisation which pays no regard to, or has no knowledge whatever of, the laws of nature. And while we can all choose to buy *New Idea*, or watch TV or listen to commercial radio stations, we have no such options about paying taxes to the government for them to spend in this way. Every Skeptic, every scientist, every medical practitioner is helping to fund this recognition of anti-scientific pseudo-healthcare. Write to your MP today and complain about it in the strongest terms. Who knows what other departments will follow this lead?

So, it is with a heavy heart and a firm conviction that the lunatics finally are in charge of the asylum, that I announce that the Bent Spoon Award for 1994 has been won by the Commonwealth Attorney General and in the long and distinguished history of this award, I cannot think of a more worthy recipient.

Footnote

Shortly after this award was announced, the AMA published an article about it in its newsletter, *Australian Medicine*.

As a result, we have had a rush of subscriptions from members of the medical profession. Welcome aboard, doctors all, and while I have your attention, there’s this funny pain I get ...

CONVENTION PAPER

A Sceptical Look at Greenhouse

Ian Plimer

The following article is the text of a paper presented by Professor Ian Plimer to the National Convention in Sydney in June.

Introduction

Many of us are highly sceptical of the claims made by soothsayers, astrologers, clairvoyants, proph-ets of doom and the religiously unbalanced. These claims are generally not supported by evidence, are misinterpretations of the existing body of information, commonly use one unsubstantiated belief to support another unsubstantiated belief, rely on dogma and are made uncritically. Some of the scepticism about such claims comes from scientists who, quite correctly, ask for the evidence to be provided to substantiate such claims.

What about scientific claims? Scientists, for various reasons, also make claims and predictions. How valid are scientists' predictions regarding the greenhouse effect, sea level change and the ozone hole? Are not some of these claims made by critical scientists with their conclusions underpinned by hard evidence or are such claims made by somewhat more sophisticated prophets of doom? I enter hallowed turf and critically evaluate some of the claims made by my fellow scientists. Many of these claims have been enthusiastically supported with almost religious fervour by non scientists.

Climatic change

No issue in twentieth century science has captured the public's imagination as much as global climate change. We hear claims of global temperature changes of up to five degrees Celsius with the suggested resultant melting of the polar ice caps and sea ice. Such ice melting, it is claimed, will result in sea level rise, marine incursions of lowlands, changes in agricultural productivity and profound social changes.

However, the scientific community is divided. Nevertheless, various environmental groups and publicity-seeking scientists attract media attention with doomsday predictions despite the fact that the evidence remains equivocal.

Some examples are:

There is almost universal agreement among atmospheric scientists that little, if any, of the observed warming [less

than one-half degree C] of the past century can be attributed to the man-induced increases in greenhouse gases (Elsaesser, 1991).

Each year now the level of greenhouse gases in the atmosphere reaches a new high and the ozone layer grows thinner. These fundamental assaults on the atmosphere are caused almost entirely by rich nations that use most of the fossil fuels and ozone-depleting chemicals. Yet long term costs will be borne by humanity as a whole. Ozone depletion may cause skin cancer among Andean peasants, who never used aerosol spray cans, while global warming could flood the homelands of Bangladeshis, who have never used electricity (Brown, 1991).

Current forecasts of the man-made greenhouse effect do not appear to be sufficiently accurate to be used as a basis for sound national policy decisions (Jastrow et al, 1991).

Global warming is no longer a distant threat, but a shockingly present reality (Erickson, 1990).

Global warming is an outright invention. It is absolutely unproven, and in my view it is a lie. A lie that will cost billions of dollars annually... There is no danger from the CFCs to the ozone layer, nor is there any danger from CO₂, no greenhouse effect, nor any risk of any kind of global warming. It is, to me, a pure falsehood (Tazieff, 1992).

The scientific basis for greenhouse warming includes some facts, lots of uncertainty, and just plain ignorance - requiring more observation, better theories, and more extensive calculations... There is major uncertainty and disagreement in the scientific community about predicted changes as a result of further increases in greenhouse gases: The models used to calculate future climate are not yet good enough. As a consequence, we cannot be sure whether the next century will bring a warming that is negligible or a warming that is significant (Singer, 1992).

Some of these statements regarding the future of our planet are somewhat alarming. However, if fact and interpretation are disentangled and conclusions are based on evidence and not emotion, dogma or political correctness, then it is quite possible that there is a completely different scenario. There

certainly was a different scenario in the not too distant past. *The facts have emerged, in recent years and months, from research into past ice ages. They imply that the threat of a new ice age must now stand alongside nuclear war as a likely source of whole-sale death and misery for mankind (Calder, 1975).*

There are ominous signs that the Earth's weather patterns have begun to change dramatically and that these changes may portend a drastic decline in food production - with serious implications for just about every nation on earth (Gwynne, 1975).

According to the academy [National Academy of Sciences] report on climate, we may be approach-ing the end of a major interglacial cycle, with the approach of a full-blown 100,000-year ice age a real possibility... with ice packs building up relatively quickly from local snowfall that ceases to melt from winter to winter (Science March 1, 1975).

The continued rapid cooling of the earth since World War II is also in accord with the increased global air pollution associated with industrialisation, mechanisation, urbanisation, and an exploding population, added to a renewal of volcanic activity.... (Bryson, 1971).

The sensitivity of climate was pointed up independently by a Soviet and an American scientist, who concluded that a permanent drop of only 1.6 to 2 percent in (solar) energy reaching the earth "would lead to an unstable condition in which continental snow cover would advance to the Equator... [and] the oceans would eventually freeze," according to a recent US scientific advisory report (Matthews, 1976).

What are the facts about greenhouse gases? Very few. The major greenhouse gas is water vapour. Is atmospheric water vapour anthropomorphic or from natural phenomena? Surely no one could possibly suggest that the principal greenhouse gas derives from human activity? What about carbon dioxide? The only fact we know is that atmospheric carbon dioxide has been increasing over the last 500 years to its current level of 0.035% of atmospheric gases. This has been ascertained from inclusions of air trapped in Antarctic Ice. What we don't know is why atmospheric carbon dioxide has increased over the last 500 years. We also don't know much about the history of carbon dioxide on our planet.

Sea level rise or land fall?

Much of the discussion about greenhouse is on the interpretation of the scientific facts. However, if we expose these facts to rigorous evaluation, can we trust them? Recent claims of sea level rise have derived from the 150 year old records of tidal measuring stations at ports. Such sea level rises are attributed to global warming resulting in polar ice

melting and sea level rise. However, are these tidal measurements correct?

Tidal measuring stations probably do not measure any long term rise in sea level. Because of the vibration and ground loading in cities and ports, subsidence takes place. The mean sea level rise recorded at tidal measuring stations is not a measure of sea level rise. It is a measure of the mean subsidence rate of populated areas. It is clearly of anthropomorphic origin.

The rise and fall of land masses also takes place naturally. The south of England is subsiding and tilting to the south east thereby requiring the building of the Thames Barrage. The loading of more than 1000 metres of ice on Scandinavia during the last ice age resulted in the sinking of Scandinavia. Since the melting of the Scandinavian ice sheet 10,000 years ago, Sweden and Finland have been rising at a rapid and measurable rate. For example, the Castle of Turku was built on an island in the 12th Century. The land has risen so much that the castle is now part of the Finnish mainland and ships moored in the port of Turku are boarded not with a gangplank but with a ladder. As a result of the post-glacial rise of Scandinavia, the lowlands of Holland, north Germany and Denmark are sinking.

Many port cities in the ancient world are now inland and above sea level. Much of the Mediterranean ancient world is in active geological areas which undergo rapid subsidence and uplift. Some port cities underwent natural uplift at such a rapid rate that they were abandoned after some 200 years of uplift (eg Efeses, Turkey).

On a greater time scale, the eastern highlands of Australia arose from the uplift and tilting of eastern Australia associated with the opening of the Tasman Sea over the last 50 million years.

Even in geologically quiet parts of the world, there are constant changes. Subsidence is currently taking place in parts of inland Australia (eg Lake Eyre) and other areas are rising as a result of geological forces. It is quite possible that land rise might be related to climate change. If an area undergoes deep weathering and erosion in tropical conditions, the weathered mass of land buoyantly rises.

In geologically active areas, land rise and fall is very dramatic. For example, Mount Everest is currently rising at 2 centimetres per year as a result of the collision of the northward-drifting Indian subcontinent with the Asian continent. If the height of Mount Everest is quoted accurately, the year the height measurement was made must also be given otherwise the simple measurement of the height of our planet's highest mountain is meaningless.

The planet Earth is dynamic. To assume that land masses and cities can be used as static areas for the measurement of global sea level changes is, at best, a naive focused view of our planet.

The key questions

The influence of the increasing atmospheric CO₂ content raises three fundamental questions:

- (a) Either the Earth is getting warmer or it is not. If there is a reliably-measured temperature change, either it is natural or it is not.
- (b) If the Earth's atmosphere increases in temperature, either it is caused by increased CO₂ or it is not.
- (c) Either the documented increase in atmospheric CO₂ is caused by industrial activity, natural phenomena or both.

Is the globe warming?

Although official temperature records have been kept since 1781, there are historical accounts and geological evidence which provide a guide to global temperature changes. Over the last 17 million years, planet Earth has experienced 10 glaciations. These glaciations comprise an ice age and a warmer interglacial period and probably result from orbital changes of planet Earth. However, not all climate changes result from changes to the eccentricity of the Earth's elliptic orbit. The Precambrian glaciation some 1000 million years old has left geological evidence in much of inland Australia, especially the Flinders Ranges of South Australia. A study of the ancient magnetic field of 1000 million-year old lavas shows that glaciation was at both the poles and the equator. At this time, the Earth's orbit was considerably different from the orbit today, probably because of impact with a giant meteorite or asteroid. Ice ages can also occur when a continent drifts over a pole.

Sediments form at the interface between the atmosphere, the hydrosphere and the lithosphere. Even creationists agree that sediments and sedimentary rocks contain fossils which can tell us about the history of the planet. Sediments and sedimentary rocks provide a long and rich history of planetary climates, sea level changes, atmospheric changes and life. Some 100 million years ago, global sea levels were very high. The Great Artesian Basin of inland Australia was deposited at this time as shallow marine sediments and much of the limestones and associated sediments in Europe and Mediterranean regions were deposited then from extensive warm tropical seas. In southern Australia 110 million years ago, the sediments were deposited at polar latitudes in warm water conditions. The anatomy of the dinosaur fossils shows that they had large eyes because of the long periods of darkness at such high latitudes.

There have been thousands of periods of global warming, global cooling and sea level changes in the history of planet Earth. Some mass extinctions of life and most minor extinctions resulted from climate change. A period of profound cooling drove hominid evolution and each major evolutionary change in hominids can be related to an event of global cooling.

In more modern times, long term natural climate oscillations over a 2500 year cycle appear to be normal. Sahara cave paintings have been dated at 6000, 3500 and 1000 years before the present. These paintings show elephants, giraffes, hippos and crocodiles and are a human testimony of previous high rainfall periods.

The Medieval Optimum took place between 900 and 1100 CE. At this time, the warmer global climate was such that oranges and grapes were grown in England and the Vikings sailed around the northern shore of Greenland in a relatively iceberg-free North Atlantic Ocean. We don't hear proponents of global warming claiming that this historically-recorded event of global warming was a result of industry-related greenhouse gas emissions.

After the Medieval Optimum period of global warming, an event of global cooling took place. This event, the Little Ice Age, is well documented in European history for the period 1450-1850. Temperature records in Europe show mean winter and summer temperatures a few degrees colder than temperatures today. The Thames River in England regularly froze, the last time being in 1814. Trees froze and the accumulation of ice in the sap resulted in tree explosion. Paintings by some of the Dutch masters showed very severe winters. The Little Ice Age had a profound impact on General Washington's army at Valley Forge in 1777-1778. Even after the Little Ice Age had ended, there were some exceptionally cold winters. The siege of Paris in the Franco-Prussian War of 1870-1871 was conducted in the coldest winter on record and the years 1881 and 1882 were the coldest years on record.

More recent history again tells us of climate change. Mark Twain records orange groves in the Mississippi Valley whereas oranges are now grown no further north than Orlando, Florida. In Florida, there have been 24 Arctic outbreaks in the last 30 years. The US Department of Agriculture frost risk maps have shifted the frost risk 160 km south over the last 50 years.

Land temperature records from Europe and North America show that there is no consistent trend. Although temperature fluctuated, a minor warming was recorded from 1910 to 1938 followed by a minor cooling from 1940 to 1980. This minor cooling took place during post war industrial growth! Although the warmest summers on record in USA were 1988-1991, in the Midwest and East Coast, the summer of 1992 was the third coldest on record. It is clear that long term predictions based on short term measurements are, at best, dubious. Yet conclusions based on short term measurements are the foundation for global warming predictions.

The measured net change over the last century is no more than plus or minus half a degree C. This change is mainly a result of changes in night time temperatures. This lack of a measured catastrophic warming is corroborated by the 145 years of surface sea temperature measurements by MIT. Furthermore, Tiros II, the temperature-measuring satellite, has shown that there are no trends in global temperature.

Although Tiros II has recorded a slight night time temperature increase of 0.056 degrees C, this change is restricted to the winter months. In addition, the Goddard Space Center calculates that over the last century, the global temperature has changed by no more than 0.4 degrees C.

The future has cast a long shadow into the past. By analysing the past, we can make sensible predictions about the future. Unfortunately, most climate models use present day information. Climate change is normal. What many of the greenhouse prophets of doom don't realise is that if there was no climate change on our dynamic planet, then the planet would really be facing a catastrophe.

The first fundamental question was: either the Earth is getting warmer or it is not. If there is a reliably-measured temperature change, either it is natural or it is not.

The evidence for present day global warming does not exist. Furthermore, the historical and geological evidence suggests that natural global temperature changes are the norm. Although human activity has local microclimate effects such as the urban heat island, there is no evidence to suggest that human activity affects the global climate.

Sea level rise - we'll all be doomed!

Global climatic catastrophists claim that if there is global warming, polar ice caps and sea ice will melt thereby producing a sea level rise. It all seems quite logical. Melt ice and sea level will rise. But will it?

The geological past shows hundreds of events of sea level rise and sea level fall. Some of the favourite areas to study sea level changes are coralline oceanic islands. With a land rise or sea level fall, a coral plateau forms. With a sea level rise or land subsidence, coral growth is accelerated and a fringing reef or atoll grows. However, most coralline islands form on submarine volcanoes which rise before eruption and subside after eruption. Many coralline islands appear to have risen after a period of global warming.

Upon loading of the oceans with excess polar melt waters, the ocean floor subsides because of the thin oceanic crust and the plastic substrate of mantle rocks. Subsidence of ocean floors allows a greater volume of water to be accommodated in the oceans which in turn accelerates ocean floor sinking. Furthermore, with subsidence of the ocean floor, the thicker crustal areas rise. The thick crustal areas are continental masses.

Hence, if polar ice melts in a period of global warming, the oceans subside to carry more water and the continents rise as a counterbalance. The relative sea level may be such that upon global warming, sea level could fall! To just simply put all of the volume of polar ice into the sea and to calculate an absolute sea level rise is not supported by evidence. Such calculations that assume that the oceans and continents are not dynamic is an extremely simplistic understanding of nature.

There is no guarantee that with the melting of ice that the

sea level will rise in response to the greater volume of water. However, it is probable that polar ice melting will produce an initial sea level rise followed by a fall because of the lag factor in geological forces operating in the Earth's mantle. Whatever the scenario, the sea level rise will be far less than that calculated by simply putting all of the polar ice into the oceans.

There have been some claims that a rise in sea level will result in a loss of species. The fossil record associated with the numerous past sea level rises shows a different story. Sea level rise creates a greater diversity of shallow water ecologies and, rather than producing an extinction of life, there is a blossoming of life.

If we look at the history of planet Earth, we see that polar ice caps are somewhat uncommon. This planet has not had polar ice caps for the bulk of time. We live in an unusual period of post-glacial or interglacial time. Greater volumes of oceanic water are expected. Claims that a sea level rise would be catastrophic demonstrate a bewildering lack of basic knowledge of the history of our planet.

Carbon dioxide and hot air

The second and third fundamental questions were: If the Earth's atmosphere increases in temperature, either it is caused by increased CO₂ or it is not and either the increase in CO₂ is caused by industrial activity, natural phenomena or both.

As it could not be established whether the Earth's atmospheric temperature had risen, the influence and origin of atmospheric CO₂ becomes even more uncertain. It is important to note that the Earth's atmosphere is dynamic and that the atmosphere has changed greatly in composition. The Earth's atmosphere contains some 80% nitrogen and 20% oxygen with a minor content of carbon dioxide and rare gases.

The early atmosphere of the Earth was dominated by nitrogen, ammonia and methane. It contained less than 0.1% oxygen. Anaerobic bacteria appeared at the same time as the first rain some 3800 million years ago. This highly reducing atmosphere supported only anaerobic life until 2200 million years ago when the oxygen content increased to 1%. The origin of the global oxygenation of the atmosphere is unknown however it is probably due to a combination of photodissociation (break-down of oceanic water into oxygen and hydrogen by UV light) and photosynthesis by algae. The effect of global oxygenation was profound. All the dissolved iron in sea water precipitated as in-soluble oxidised iron minerals 2200 million years ago. This produced the banded iron formations which are exploited in the Hamersley Ranges of Western Australia, India, Brazil, Canada, USA and Russia.

Associated with the Cambrian explosion of life 570 million years ago was an increase in global atmospheric oxygen content from 1% to 10%. Atmospheric carbon dioxide was also very high at this time. With the appearance and colonisation by the land plants 470 million years ago, the oxygen content rose from 10% to nearly its current level of

20%. This rise of the land plants was facilitated by an atmospheric carbon dioxide content ten times higher than the current atmospheric carbon dioxide content.

Evolution of the atmosphere is inextricably linked into evolution of the oceans, evolution of the crust and evolution of organisms. To claim, as the creationists do, that the evolution of life is an isolated system unrelated to the dynamic crust, oceans and atmosphere is a demonstration of a lack of basic scientific knowledge. Similarly, to claim, as some greenhouse proponents do, that the evolution of the atmosphere is an isolated system unrelated to the dynamic crust, oceans and evolving life displays an appalling lack of scientific knowledge.

The climatic effects of carbon dioxide, methane and stratospheric gases in the atmosphere is un-known. Although CO₂ is a greenhouse gas, its effect is far less than that of water. Furthermore, the water vapour content of the atmosphere is far greater than the atmospheric content of CO₂. The burning of fossil fuels is returning CO₂ to the atmosphere at a far faster rate than the extraction of CO₂ from an ancient atmosphere. More importantly, the burning of the Carboniferous high sulphur coals from the Northern Hemisphere not only contributes to acid rain but adds sulphur gases to the atmosphere. These sulphur gases increase solar reflectivity thereby causing some global cooling. Fossil fuel burning certainly adds CO₂ to the atmosphere, the effects of this return of CO₂ to the atmosphere are unknown, and the long term natural historic and prehistoric changes in CO₂ have been in the absence of human intervention.

There is some evidence to show that historic increases in CO₂ have occurred at the same time as temperature increase. However, the increase in temperature precedes the CO₂ increase. Rather than increasing CO₂ producing an increase in global temperature, it is quite possible that an increase in global temperature produces an increase in atmospheric CO₂. This is supported by the inverse solubility of CO₂. With most substances, as temperature increases, so does solubility. In contrast, the solubility of CO₂ decreases with increasing temperature. Hence, a period of natural global warming will result in the release huge quantities of CO₂ into the atmosphere. This has happened many times in the past.

To claim, as some global warming doomsayers do, that the burning of fossil fuels will create a global warming is not substantiated by evidence and is grossly misleading.

The CO₂ content of the atmosphere was more than ten times the current content in the Silurian period 470 million years ago when land plants first appeared. It is probable that the decrease in atmospheric CO₂ and the increase in atmospheric oxygen are the direct result of the rapid colonisation of continental areas by land plants. It is well known from laboratory experiments and controlled atmosphere crop growing in glasshouses that CO₂ stimulates plant growth. On planet Earth today, it is not known whether the measured increase in atmospheric CO₂ is counterbalanced with an in-

crease in plant growth, increased extraction of CO₂ from the atmosphere and increased oxygen production.

Carbon balance

When the carbon balance between the atmosphere, hydrosphere, biosphere and lithosphere is calculated, only 50% of the global carbon can be reconciled. Estimates of the total amount of carbon in land plants, plankton and sea water are unreliable and, furthermore, the total amount of carbon fixed in limestone, carbonaceous rocks and fossil fuels is unknown. For example, the CO₂ content of the atmosphere is one millionth of the CO₂ content of limestone. The total emissions of CO₂ and methane from animals (especially termites), swamps, vegetation decay, coal seam degassing and petroleum reservoir degassing is not known. Furthermore, emissions from coal seams and petroleum reservoirs are very irregular and are commonly a result of sporadic geological processes.

Huge quantities of CO₂ are held in fluid inclusions in minerals and in pore spaces in rocks. In fact, so much CO₂ resides in sediments that CO₂ is commercially produced from deep drill holes in sedimentary rock sequences. The uptake of CO₂ by marine micro-organisms, shallow water invertebrates and cement used in the conversion of sediments to sedimentary rocks is unknown. For example, the phytoplankton *Emiliana huxleyii* fixes CO₂ from the atmosphere and releases dimethyl sulphide which helps to nucleate water droplets and form clouds. If atmospheric CO₂ actually contributes to climate warming, then climate cooling will be induced by increased back reflection from the *Emiliana huxleyii*-induced cloud cover. Dead organisms which have calcium carbonate shells sink to form carbonate-bearing rocks. However, at a water depth of greater than 3800 metres (carbonate compensation depth), calcium carbonate dissolves back into seawater. The distribution of species with carbonate shells related to water depth is unknown.

The contribution of volcanoes

In geological environments where the crust is being extended (eg mid ocean ridges, continental rift zones), large quantities of CO₂, methane and helium are exhaled. Mid ocean ridges, submarine volcanism and modern rift valleys are the focus for the degassing of the Earth's mantle gases. Most of this degassing occurs in irregularly mid ocean ridge settings where we have few reliable measurements of the natural addition of CO₂ and methane to the atmosphere.

In continental areas, the exhaling of CO₂ is better known. Continental rift zones result from the stretching of the crust. This creates deep fractures which are the conduits for the ascent of mantle gases such as CO₂, methane and helium. In the East African Rift, not only are large volumes of CO₂, methane and helium exhaled, but some volcanoes have lavas composed of carbonate minerals. These carbonatite melts lavas are composed of calcium, sodium and iron carbonates

and, for the last few thousand million years, have formed every time an event of continental extension took place.

If continental extension is aborted and a rift zone does not form, then unusual basalt melts result from the partial melting of the mantle. Because the mantle is rich in CO₂ and methane, these gases are released with the basalt melts. Basaltic volcanism has taken place over the last 70 million years in eastern Australia and CO₂ is commercially produced from some of the younger eruption centres (eg Mt Gambier, South Australia). The modern extensional volcanism in the Bismarck Archipelago in eastern Papua New Guinea is a modern day environment where CO₂ is constantly released to the atmosphere. At Lake Nyos in Cameroon a decade ago, the sudden night time release of CO₂ from a basalt volcano crater resulted in the asphyxiation of hundreds of villagers and their livestock. Mid oceanic burps of CO₂ commonly occur and may well be responsible for massive oceanic fish kills.

Volcanoes in areas of continental collision (stratovolcanoes) also release greenhouse gases but not on the same scale as volcanoes in extensional settings. For example, the minuscule Mount St Helens volcanic eruption in USA in 1980 released 910,000 tons of CO₂. Mount Erebus in Ant-arctica exhales massive quantities of CO₂, hydrochloric acid, sulphuric acid, hydrogen disulphide and sulphur dioxide. The most abundant gases exhaled from stratovolcanoes are water vapour, CO₂ and sulphurous gases. Because most stratovolcanoes are in third world countries who have other pressing priorities, the long term measurement of the volume and composition of exhaled gases has not been undertaken.

Stratovolcanoes are highly explosive because of the high gas content. They produce a predominance of ash and very little lava. The bulk of the ash falls proximal to the source volcano however much reaches the stratosphere. The Mount St Helens eruption only produced some 2.8 km³ of ash whereas stratovolcanoes in other collisional zones such as Taupo in New Zealand produced up to 1000 km³ of ash. The eruption of Krakatoa in Indonesia was an order of magnitude greater than Mt St Helens. The resultant stratospheric ash produced spectacular sunsets and cool wet winters for the following three years because the ash reflected incident solar energy and acted as a nucleus for the precipitation of water. A similar phenomena occurred with the recent eruption of Mount Pinatubo.

The most common gases released from volcanoes are greenhouse gases. Volcanicity is sporadic and we are currently in a period of volcanic quiescence (despite sensational news reports to the contrary). The current estimate of CO₂ release from volcanicity is 200 billion tonne per annum. This is in contrast with the estimated 7 billion tonne per annum from anthropomorphic fossil fuel burning. Both the CO₂ release from volcanicity and from fossil fuel burning are recycling CO₂ from rocks back to the atmosphere.

Whence came the atmosphere?

One basic question is rarely asked. Where does the atmosphere come from? Our planet's atmosphere has derived from thousands of millions of years of degassing of the planet during its evolution and cooling. It is still degassing. This degassing takes place via volcanicity. Because the atmosphere has formed from volcanicity, it is not possible to ignore the profound impact that volcanicity has on the changing composition of the atmosphere.

The volume of methane consumed in soil with oxidation reactions is unknown. Variable estimates have been made for the release of methane from rubbish tips, sewage treatment and leakage from gas pipes, however it appears that these anthropomorphic sources of methane are order of magnitude less than those from natural processes.

It is distinctly possible that global temperature changes might be totally unrelated to greenhouse gases and may derive from variable volcanicity, planet orbital and incident solar radiation fluctuations. But to have climate change unrelated to industrialisation, agriculture and human activity is not politically correct as the breast-beating guilt factor evaporates.

Our knowledge of CO₂ and climate is far from complete and inadequate to make scientific dooms-day predictions. To unequivocally state that the recent increase in greenhouse gases will create global warming is breathtakingly asinine. If all the inter-relationships on the planet are evaluated, it is currently impossible to make such predictions.

The Sun

There is a strong correlation between the surface changes in temperature of planet Earth and the magnetic activity on the Sun. Magnetic storms or sun spots occur every eleven years. The number and intensity of sun spots vary with each cycle as does the cycle length. The variation in length of the solar cycle correlates closely with the long term temperature variations on Earth.

In 1930, Milutin Milankovich recognised that there was a relationship between astronomy, sun spot activity and global climate change. Milankovich correlated glacial events with the Earth's motion, especially the top-like precession and the ellipticity.

It is quite distinctly possible that astronomical features are far more significant for global climate than CO₂.

Greenhouse fears

I am very sceptical about claims regarding the relationship of CO₂, climate change and sea level change. Such claims are based on a simplistic understanding of the history and processes of planet Earth. Although our knowledge of planet Earth is far from complete, it is still adequate to demonstrate that claims regarding global warming as a result of human activity are highly dubious. One wonders whether the evidence for global warming only exists on computer models using incomplete data.

However, greenhouse shock-horror stories are good copy.

So, please don't take away my fears of the unknown. I gain comfort from the knowledge of the forthcoming doomsday. I gain strength from my ignorance. I gain righteousness from my dogma. I have a sense of belonging to the human race because I am greatly concerned about the future of planet Earth. I can live in awe of the great authoritarian leaders who have the scientific knowledge to satisfy my worst fears and preconceived beliefs. I can make my perceived guilt a virtue and can wallow in narcissism. When I know who is responsible for the death of our planet, life becomes comfortable. I can direct the focus at THEM, take the high moral ground and abrogate all responsibility.

Don't even question my unsubstantiated beliefs.

Go away!

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A Scientist's Lot

Joe Wolfe

Why is the press more interested in bathtubs than in science? Steve Hynes discussion about bath-tubs in *the Skeptic* (Vol 14, No 1) prompted me to write an article (Vol 14, No 2) about the fundamental questions of inertial frames, Mach's principle and the history of these issues.

Soon after, I was contacted by a journalist from the *Sydney Morning Herald*. I had the impression that he was interested in these topics and wanted to write an article about them, and so I spent some considerable time explaining the ideas of inertial and rotating frames in simple terms. He also asked me which way water would flow down a plughole in the Southern hemisphere, and of course I refused to give a simple answer, pointing out that this depended on the shape of the tub and the initial conditions. I referred to the statement in my article that, if horizontal forces were zero or negligible, objects in the Southern hemisphere would appear to curve to the left, viewed from above, and that the counterclockwise major currents of the South Pacific and South Atlantic are usually attributed to this effect.

"Are you saying that water goes down the plughole anticlockwise?" "No", I responded, "in a bathtub horizontal forces are not negligible." He repeated the question several times, and each time I gave the same answer. I took particular care that, each time I mentioned the apparent deviation of motion in the earth's frame, I used the caveat "when horizontal forces were zero or negligible", and I stressed to him the importance of this qualification.

The reporter told me that my answer to his question was different from that given by a colleague. I thought this strange, so I consulted with the colleague: there was no inconsistency and so I called the reporter to tell him so. The end result was that the reporter wrote an amusing story about scientists who couldn't agree about the direction of water flowing down plugholes. I was of course annoyed that he misquoted me by the simple expedient of removing my caveat about the horizontal forces.

What is more serious than my annoyance, however, is that his piece for the *Herald* gave not the slightest hint that the several articles in *the Skeptic* had talked of questions with profound and important physical and historical implications, and of the importance of the scientific tradition of observation rather than the acceptance of an orthodoxy.

This, I think, is a pity. These special, inertial frames and their cosmological implications are fascinating to me, and I suspect that the topic would have been of interest to many of the *Herald's* read-ers. The sad thing is that the reporter judged it a better story to describe a lot of boffins arguing at length about plugholes than to talk about some interesting physics. This says a lot about science and its treatment in one of Australia's largest newspapers. ■

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CONVENTION PAPER

Misleading or Misreading Science

Two Case Studies

Andrew Parle

The following article is the text of talk given by Dr Andrew Parle at the National Convention.

Introduction

One of the differences between science as opposed to pseudo-science is that although both may make - in fact, both must make - errors, science has mechanisms to correct its errors, while in pseudo-science mechanisms operate which seem to magnify errors. For example, whenever an inconvenient fact gets in the way of a theory, the typical reaction of a pseudo-scientist is to add some special case, some new parameter, some extra condition to the original erroneous theory instead of looking at the original theory in a critical light. This difference is crucial, because any advance must lay the scientist open to the possibility of error, and unless errors can be corrected, the whole enterprise will become hopelessly corrupted.

It is the great strength of science that errors, even those of long standing and hallowed by time, are open to challenge and correction if the data so warrants it. Critics have charged that this process may not happen as quickly as they might want, but no-one can deny that it does happen eventually. This is at least partly because every piece of scientific knowledge does not stand alone, but carries its antecedents with it.

In principle, given any fact, one should be able to trace back why we believe it and what evidence supports it. On the other hand, tracing the genealogy of a pseudo-scientific "fact" frequently leads back to folk lore, urban myth, superstition, or someone just making it up.

It may even be an interesting exercise to classify current pseudo-sciences by the origins of their own particular lunacy - however, that is beyond the scope of this paper.

Medical science is perhaps one of the most important ways in which the scientific enterprise affects everyone in our society. Medicine, after all, directly affects people's lives and health. Yet because of this very importance, there is both a quite unreasonable demand for scientific certainty and at the same time a very low tolerance for the errors which are inevitable when medical science tries to identify the causes of and risk factors relating to disease. This may explain to some extent why the medical charlatans still flourish among us, in that the certainty their overly simple solutions offer us satisfies some deep felt need in the general public, while a

complex systems of explanations, probabilities and degrees of certainty seem to convey a sense of incompetence rather than a proper degree of scientific care.

The opportunities for uncertainty and errors are greatest when you are looking for weak phenomena close to the noise limit. A strong correlation involving a common disease, such as the one between bacteria and infection, or the one between smoking and lung cancer, can be picked up by anyone with the elementary tools of the observer. In the case of infection, the cause is immediate and can be induced and studied at will. In the case of lung cancer, after dissecting the blackened lungs of a few hundred smokers, and noting that nineteen out of twenty victims of a disease which was almost unknown before the widespread use of smoking tobacco, you would have to be fairly dim or an employee of a cigarette company not to hypothesise a connection.

However, consider the case of a mysterious disease or group of diseases, whose causes may be far removed in time although the effects are tragically apparent today. Further, let this disease be fairly rare, striking apparently at random and without any obvious pattern. In this case, the tools which served medical science might well fail, and more powerful ones are required.

There are two approaches which may be tried. The first is to examine the disease in action, to look for clues as to how it has arisen. The second is to study the patterns behind the observed occurrence of the disease to discern the common factors in its genesis - in other words, to apply the methods of clinical epidemiology. If you are lucky, these common factors themselves may lead you directly to the cause, but at the least they may point the way to risk factors which may be avoided.

The subtle difference between the cause of a disease and the risk factors which are associated with it is often lost on the public.

Take cholesterol as the classic modern example. There is undoubtedly a close association between a high concentration of certain forms of cholesterol in the blood and heart disease. This does not mean that all people with high cholesterol will die young of heart attacks, nor that those with low cholesterol will never have a heart attack. But it does say that in the absence of other evidence - for example, an irregular heart beat or a family history of heart disease - that a person with

low cholesterol is less likely to have a heart attack in the near future than one with high cholesterol.

Even more so, the evidence of even a close association between a risk factor and a disease may in itself be a poor indicator as to the best course of action to reduce the risk of disease. Giving up smoking will eventually lower your risk of lung cancer, if you haven't started it already, because it removes a direct irritant to the lung tissue. But taking drugs to lower your blood pressure or cholesterol may not necessarily lower your risk of a heart attack and may even increase it, as an artificially lowered pressure does not indicate the inner state of health that a naturally low blood pressure indicates, and the drugs taken will almost inevitably bring some additional risk of their own.

For all the effort and research that has gone into preventing heart disease, still the major risk factor is who your parents were and how young they were when they had a heart attack.

Although heart disease is rightfully feared as a killer, it still pales in the popular imagination before the C-word, Cancer. Learned treatises have been written and argued as to why it is so, but there is little doubt as to which of the two brings the most horror to mind. My own personal theory is that television soap operas, where cancer is a favoured device for removing a character while wringing the greatest amount of pathos from their demise, have a lot to answer for in this regard.

Be that as it may, cancer in general, and cancer in children in particular, carries with it an exceptionally heavy emotional burden in our society. Add to that its generally mysterious nature and the apparent inability of medical science to cope with it, and the conditions are right for poor science, fringe science, and outright pseudo science to take centre stage. In fact major advances have been made in many areas of childhood cancer in recent years, and many forms - like leukaemia, which was once almost uniformly fatal, can now be treated successfully, but this does not yet seem to have had a great impact on the popular consciousness.

In this paper, I would like to look at a couple of areas where dramatic claims have been made about the causes of childhood cancer: one of which appears to have been laid to rest, and the other of which is still simmering along with no resolution in sight.

Case Study 1

The Vitamin K Affair

The vitamin K affair played in the newspapers, frequently on the front page, in the first few months of 1993. First there was a dramatic, front page story that two scientific studies had found that a common medical procedure - the injection of vitamin K given to most new-born infants - was associated with a doubling of the risk of childhood cancer. Along with this was the news that the National Health and Medical Research Council had recommended that, in future, new-born

babies be given vitamin K in an oral preparation which was not implicated in the study.

This was followed by a few more articles, some well informed but many less informed, about whether it was safe to give any vitamin K at all, along with a lot of concern from every parent of the last thirty years which is how long giving vitamin K to babies had been the standard practice.

Finally, after some months, a new leading article appeared which said that further research had not confirmed the original studies and it appeared that they were in error. In conclusion, injecting vitamin K was perfectly safe as far as the risk of cancer was concerned.

From the point of view of the lay public, it may well seem that this was just another blunder by scientists, but I feel that it was far from a blunder and the story has important lessons about how science was able to deal with apparently false data.

Why Vitamin K is used

Vitamin K is important because it is involved in blood clotting - specifically, it is a cofactor in the production of several coagulant and anti-coagulant proteins. Most new-born children have a deficiency of vitamin K. This can lead to a condition, called Haemorrhagic Disease of the New-born or HDN, where unexpected bleeding occurs in about 1% of infants in the first week of life. A more serious form, Late Haemorrhagic Disease, occurs from 2 to 12 weeks of life and often includes cerebral haemorrhage leading to disablement or death. This is much rarer, at around 5 per 100,000 births, when no preventative measures are taken.

Luckily, treatment by giving vitamin K to the infant by injection shortly after birth, or by mouth over a longer period of time, is very effective against both these conditions and this has been the standard procedure in Australia and other developed countries for 30 years. Injection is preferred because when given by mouth, babies tend to spit it out and because doses have to continue to be administered by the parents after the baby has left the hospital. Haemorrhagic disease is now very rare.

Preliminary Study

This state of affairs continued until a couple of research papers, published by a British research team, found an association between vitamin K given by injection and childhood cancer.

The first paper published in August 1990, found associations with a number of factors, including maternal X-rays, smoking during pregnancy, use of the pain-killer pethidine during labour, premature delivery, and the administration of certain drugs after birth, primarily vitamin K. Such a study is only the first step, and by itself only points the way to further research. This is because there are many factors being considered simultaneously, and over a relatively small number of cases: in this instance, a total of 33 cases of

cancer spread over 16,193 children born in one week in 1970.

Luckily, this study, published in the *British Journal of Cancer*, was not noticed by the popular press. One can imagine the headlines:

On the front page:

Pain Killers in Labour Cause Cancer!

which would be a shocking story because over half of all women in labour DO use pethidine.

On about page 8:

Smoking in Pregnancy Causes Cancer!

which is hardly a story at all because it's probably just what one expects.

If this kind of story got wide publicity, it could cause a great deal of damage, because neither most journalists nor the public would understand the tentative nature of the results, and the necessity for confirmation. One can imagine mothers refusing pethidine during labour unnecessarily, of hospitals being sued for causing a child's cancer, and so on. However, this was averted, for reasons which we can only speculate.

Second Study

The next stage is to refine your research to look at one factor at a time, excluding as far as possible the effects of any other factors. This is what the research team did.

They selected two of the factors of suggested by the first study: the use of pethidine, and the administration of vitamin K by injection or by mouth, and then did a larger study based on 195 cases of childhood cancer among children born in 1965 and 1987 in two hospitals in Bristol. The reason for choosing these two factors to examine is that they are ones that we can control: there is much less interest in examining premature infants, for example, because it won't help to reduce the incidence of cancer.

Now in this kind of study, what you would like to be able to do is to get complete information about every child ever born. Then you could pick groups of subjects which were identical in every conceivable way except in the factor which you wanted to study. The real world of science does not work like that. What the team had to do was to select a sample and try to make it reflect the make-up of the population as a whole. The information about every case may be incomplete: in this study, some of the medical records were missing or were incomplete, and they had to make a best guess about whether vitamin K was used and how by looking at the standard hospital procedure at the time. They had to be certain of investigating every case of cancer, because it is so rare (about one in one thousand) that a few missed instances could cause the results to be biased. A further problem was that the delivery books for three years in one hospital had been lost in a flood. The investigators compensated for these problems as well as they could and went ahead with their study.

The results of the second study were published in August 1992, and showed that there was no increased risk of childhood cancer if the mother had pain killers during labour

- which was a relief to mothers even if a disappointment to the world's lawyers. However, they concluded that the risk of cancer was double normal if the new-born was given vitamin K by injection, than if they were not given vitamin K or if it were given by mouth.

The Reaction

The immediate problem facing medical authorities around the world was how to respond to a finding which had not yet been confirmed. This was made more difficult because the study clearly had difficulties in data collection and methodology, but the results were too important to wait for independent confirmation. If the results were correct a country like Australia, there are around 200,000 births a year, we might expect around 280 additional cases of cancer in children each year due to the vitamin K injection. On the other hand, if no vitamin K at all were given, there might be 15 or so cases of late haemorrhagic disease each year, whereas with injected vitamin K, there would probably not be any.

Critics of the study pointed out that there was no firm evidence of an increase in childhood cancers in the years since vitamin K injections were first recommended by the American Academy of Paediatrics in 1961 which, if the findings were correct, would be expected. Add that to the certainty that once the study had entered the popular press, as it was bound to do, there would be extreme pressure to be seen to do something. In the event, the National Health and Medical Research Council recommended in December 1992 that healthy infants should get vitamin K by mouth, while if there were problems a smaller dose should be given by injection. This tried to balance the known lesser effectiveness of the oral treatment with the unproved, but potentially high, risk of cancer.

This decision was taken before the vitamin K - cancer link became front page news in January 1993. This was just as well, as the capacity for making sensible decisions requiring calm clinical judgement declines inversely with the amount of publicity about an issue. Even so, in the words of one letter to the *Medical Journal of Australia*:

"Recent press coverage about babies and vitamin K has been dramatic and misleading. Headlines have been interpreted by concerned parents as saying that oral vitamin K is harmful in itself, when in fact the problem is that babies are not getting enough vitamin K...."

Later studies fail to confirm

Once the second studies conclusions were published, several groups around the world launched investigations of their own. Not only was this worth confirming for its own sake, but it was worth investigating for any clues it may give to the underlying causes of cancer in general.

The initial study's major weakness was in the amount and quality of the data. This is critical in a case such as this when

the phenomena being investigated are close to the margin of detectability - a difference between one and two parts per thousand. This is less critical in investigating strong correlations, such as the link between smoking and lung cancer. In any case, in a number of places there was a large and well organised bodies of data which could be examined relatively quickly. This is important, as when the data is collected, it is generally not known for what reasons it may be used, and the very mechanism of collection can introduce biases into the results which swamp the effect you are looking for.

A major study was done in Sweden which has the luxury of years of complete records held on computer, both for all births and all cases of cancer, plus a unique identification number which all Swedes are assigned shortly after birth to enable the matching of records. This resulted in a paper published in July 1993, which is notable because one of the co-authors is a computer programmer. This study looked at the records of over 1.3 million children born between 1973 and 1989, of which one million had been injected with vitamin K, and found no increase in the risk of childhood cancer.

Another study in America, using children born between 1959 and 1966 which covers the period when the use of injected vitamin K became routine, also found no association with cancer. The origins of this study are also interesting because of what it says about the necessity for long range planning in epidemiological studies. During this period from 1959 to 1966, all births in 12 maternity centres were subjected to special recording procedures. All the things which were normally done for mothers and infants were done - it is just that there was an extra person present writing down exactly what was done. The children were followed up regularly for a period of some years afterwards. The intention was to amass a body of data about young children - totalling almost 60,000 - which was as far as possible free from any selection biases and what are called confounding factors. When the necessity arose, as it did in the vitamin K episode, it was possible to go over the records and find all cases of cancer which had occurred, select a matched set of controls, then calculate what effect if any the injection of vitamin K had had on the statistics. As mentioned before, this turned out to be negative.

Conclusion

The weight of evidence is now firmly on the side that injections of vitamin K are not linked with cancer. There are still questions which are open, such as the explanation for the original effect, if it is not just a statistical aberration. Also an open question is the effect on the public understanding of the issue, as cancer - particularly children's cancer - is a highly emotive issue and one where pseudo-science flourishes on the fringes.

In retrospect, it would appear that the original study tried to force poor data beyond the limits which it could reasonably be expected to bear. This is not necessarily bad science, as

the method of data collection and the means used to compensate for it were given in the same paper as the conclusions. The research team made use of the data which was available to them, but did not try to hide the measures they had to take to make the sample as meaningful as possible.

However, it is fortunate that there was a sufficient high quality data available to be able to check these results. If there were not, it is quite likely that this would have become one of the perennial medical mysteries where papers are published on one side of the question or another, but nothing is really settled.

Case Study 2

Cancer and Power Lines

One such perennial medical mystery which has not as yet gone away forms the basis for my next topic.

For a number of years there has been suspicion in some circles that household electricity, and particularly electricity associated with high voltage power lines, is somehow associated with a number of diseases such as miscarriage, depression and - you guessed it - cancer. Before looking at the scientific basis or otherwise for this fear, I am going to consider how it might appear to the average reader who sees an uncritical article about this in the popular press.

The key word is radiation.

As soon as the reader sees that word, a whole host of nebulous fears come into play. Radiation is, after all, a Bad Thing and one which is already associated with cancer in the mind of the public in the contexts of gamma radiation, X-rays, and ultra-violet rays. Even sunshine, which once was almost a synonym for a healthy activity, is something to avoid, to cover up against, to seek shelter from. The phrase "fresh air and sunshine" will never have the same meaning after the term "skin cancer" entered the popular lexicon.

Radiation is invisible (apart from visible light) so it is a danger which is difficult to avoid and hence a cause of greater apprehension than might otherwise be warranted.

This fear is exacerbated by the almost hysterical preoccupation in developed countries with health and disease, and the inability of most people to estimate the relative risks of what they do and what is done to them. This inability is most notorious. A study once got a group of laymen and a panel of scientists, actuaries and statisticians to rank sixty or so risks in terms of the relative danger to a person. Not only were the results not at all similar between the two groups, but the risks as perceived by the public were ranked in almost the opposite order to what they actually were.

Risk and Radiation are a potent combination on the public's feeling of well-being. One only has to consider the more emotive aspects about the debate on nuclear power, where any possibility of any radiation leak, no matter how trivial, was considered too great a risk, ignoring the fact that the

major contribution to the background radiation we all experience is the coal burned in power stations.

What radiation?

So, to electricity. The radiation we are speaking of is that of a frequency of 50 Hz (60 Hz in some small backwaters like the United States) which is emitted by the standard domestic electricity supply. Every wire which is not specially shielded and which carries an alternating current, and every device which uses this current, will emit electromagnetic radiation at the frequency of the power supply.

Some devices emit radiation at other frequencies: the microwave oven (although the emission is inside a shielded container) a heater at frequencies centred on the infra-red, the common light bulb, the television, etc at visible frequencies, the radio at a few hundred to a few thousand Hz; the mobile telephone also at microwave frequencies.

But the all pervasive radiation we are considering is the extremely low frequency (ELF) electro-magnetic radiation which power cables, high tension lines, electricity substations, and so on emit at all times, or more correctly, the evanescent alternating magnetic fields which are measurable only at distances extremely close to the source. This radiation is ubiquitous but extremely weak in the domestic setting except within a few metres of high tension lines, where it is merely very weak.

The crucial point about these fields is that they are alternating rather than static. The Earth has a static magnetic field on the order of one gauss, while the magnetic fields we are discussing have a density of a few milligauss, one hundred or so times smaller. Less well known is that the Earth has an electric field as well, of the order of one hundred volts per metre, which has the property that it frequently changes direction during electrical storms and is the cause of lightning.

There are several objections to a hypothesis of a direct causal link, based on the difficulty in identifying a mechanism of interaction. One is that the energy density of the fields is several orders of magnitude smaller than that associated with random thermal motion in biological tissue. In other words, if you observed the motion of biological molecules in detail, you would not expect to be able to tell whether or not one of these incredibly dangerous electro-magnetic fields is present. Secondly, the induced currents are many times smaller than endogenous currents associated with normal membrane processes. So if you were able to make electrical measurements of the cell, again you would not be able to tell if a field was present or not.

These arguments have some weight, but can hardly be considered conclusive because although we understand electromagnetic fields very well, the role of detailed electrochemistry in living tissue is still to some extent a mystery. Science and scientists have on a number of occasions been caught out in making pronouncements on subjects on the basis on incomplete understanding, and so some

circumspection is indicated here.

The evidence

So what is the evidence and how strong is it?

Firstly, when electromagnetic fields are strong enough to actually cause heating of biological tissue, there is proof of health effects up to and including cancer. The issue of thermal damage was settled long ago, and is the basis for safety standards in Australia and in other countries for certain kinds of electromagnetic exposure. The fields we are discussing are orders of magnitude weaker than this, however.

In this frequency range, there is quite a bit of evidence that there is a danger even when heating does not occur. This is noted both in animal studies, where groups of rats are exposed to strong fields (perhaps a thousand times stronger than near a power line) biological effects are observed and indeed all types of health problems occur.

When the exposure is much weaker than this, the evidence becomes much more equivocal and it becomes necessary to rely much more on epidemiological data. This is complicated by the fact that a mechanism for damage is as yet unknown, and without a mechanism, it is difficult to make a reasonable estimate of how risk might vary with exposure and how exposure might accumulate in its effects. There is good reason to suppose that an exposure of 10 microwatts for one hour bears no relation to an exposure of 1 microwatt for 10 hours, for example.

Travelling down the scale of exposure, our next best evidence comes from occupation studies of workers who may be expected to have large exposures to extremely low frequency radiation, such as electricity power- or sub-station workers. In this case, epidemiological studies do show a significant excess of cancers. However, the weakness in using occupation as a measure of exposure is that occupations have other things in common as well as proximity to electromagnetic fields, such as exposure to certain chemicals used in this industry. Nevertheless, the significance of the association, although not demonstrated to be causal, certainly lends some support to the idea that non-thermal levels of electromagnetic exposure is linked to cancer.

But these occupational hazards are still an order of magnitude higher than the thing we are really interested in, which is domestic exposure and particularly exposure due to nearby power lines. It is here that the data becomes really equivocal. Certain studies have concluded that the data supports an association between proximity to power lines and childhood cancer, with a relative risk factor of 1.5. Other studies fail to find any such association. All of these studies are open to criticism on one or more grounds because of the experimental difficulties on getting accurate information about subject exposure to the radiation of interest.

The conclusion of one review paper, published in February of this year and covering about 50 papers on the subject, could only conclude that the possibility of a correlation was

weak but not non-existent. That the individual risk implied by such a correlation, if it does exist, must be low is demonstrated by the very inconclusive nature of the data. If the effect were strong, it should show up much more clearly.

Of course, this is not the way the results are interpreted in the popular press and in books written by radiation advocates. They treat the association of power line exposure with cancer as a foregone conclusion, which is only unrecognised because of the delaying tactics of power industry executives, and that this association is causal is not doubted. The popular press, when it interviews those parents whose children have cancer, are equally uncritical. After all, it is extremely easy to bias an article just by giving greater prominence to those papers which happen to support the same side of the argument that you do.

Conclusion

The case against power supply radiation is inconclusive, and the measurable risk is low if not zero. So where does this leave us for the future? The only way this may ever be resolved satisfactorily is by one of two methods.

The first is for a conclusive laboratory demonstration that extremely low frequency, low density fields actually cause or promote cancer. Note the catch here. There is probably no way to prove the opposite - that these fields do not cause or promote cancer - because a critic can always claim that the effect lies below the threshold of sensitivity of any experiment. So a laboratory disproof of cancer from electricity is unlikely to be satisfactory at least to some people. What might be forth-coming is an upper bound on the risk to any individual based on the amount and type of exposure. From the point of view of industry, that is probably all that is required - firm guidelines to make the work place safer. However, it will only reinforce the group of people who have loud voices and who proclaim that "any risk is too much risk".

The other method of resolving the question of risk is by means of large scale and painstaking epidemiological research, as was used to lay the question of vitamin K to rest. This will not be easy, because the exposure to low frequency radiation is difficult to measure (make that "guess") for a large population, and the effect (an increase in the rate of cancer or other rare disease) is fairly small. Such a study would have to be very carefully designed or it is likely to end up as suggestive but not conclusive, one way or the other. We might end up finding a cure for cancer before this happens. Nevertheless, it is probably the only way that the issue is likely to be resolved.

As a final note, you may like to consider the commercial opportunities which the inventive entrepreneur may find if electrophobia takes off in Australia.

As I noted before, it is technologically possible to shield your domestic wiring or even a house against low frequency radiation. It is not terribly difficult - just costly. First, there

would be a market for devices to measure radiation. This will help prepare the gullible for the next stage if we encourage them to take readings in particular locations, like the back of the TV set or next to the hair dryer.

Then, we get everyone to replace their appliances with specially shielded ones at twice the price. Electric blankets have, of course, long been discarded, although there may be a niche market for specially engineered "low radiation" blankets for those who cannot do without them.

The next stage would be to get people to rewire their houses. The parallel wires covered in thick white plastic will have to be replaced by coaxial ones where the active and neutral leads are twisted within a conducting sheath which is connected to earth. This will only make a very slight difference, as the ordinary wiring radiates an extremely small amount anyway, but an adroit marketing campaign should produce the necessary level of paranoia to make it a paying proposition.

Getting rid of radiation from the outside is more of a problem, as putting a conducting sheath on the outside of each house is probably not economically viable for any but the fanatical electrophobe, but a little ingenuity might sell galvanised roofing and aluminium cladding dressed up with a few prominent cables connecting to earth at a mark-up of only a few hundred percent.

For the cheap end of the market, one might best concentrate on reducing the amount of radiation exposure while people sleep. You could introduce some conducting salts into the water in your water bed, earth your futon, or make conducting pyjamas into a nice little earner. My favourite idea, though, is a copper coffin with lid, to sleep in. Look for it in the next catalogue from David Jones.



Postal Address

Earlier this year we announced that, due to a merger of Post Offices, we would have a new postal address from March 1994. This address has been shown in each issue so far this year and we have waited as month succeeded month for the new post office to open.

We are now pleased to announce that the new Sydney South Post office opens on September 12. Henceforth, the postal address of Australian Skeptics National Secretariat will truly be:

**PO Box A2324
Sydney South
2000**

CONVENTION PAPER

A Need for Nuclear Scepticism

Colin Keay

This is the text of a paper presented by Prof Colin Keay at the National Convention

History

Nuclear mythology underwent a total transformation soon after the advent of nuclear weapons. Before that time, the general public were led to believe that radioactivity was quite benign and had valuable curative properties for just about every human disorder from coughing fits to wobbly knees. Advertisements for taking the “guaranteed to be radioactive” spa waters of Hepburn Springs in central Victoria promised relief for ailments of all description.

During the Second World War, intense research on nuclear physics was accompanied by concerted medical studies of the harmful effects of nuclear radiation, but not before workers painting luminous dials on aircraft instruments received very high radiation doses (due mainly to licking the radioactive paint on the bristles of their brushes) thereby magnifying their risk of developing cancer in later life. As the dangers became better known, limits for exposure to radiation were progressively tightened and many once-common devices were banned, such as the self-operated x-ray machines for checking the fit of footwear.

Growing enlightenment swept aside the old myths, but the pendulum of belief received a massive kick in the opposite direction through the pervasive influence of Joe Stalin. In 1946 he knew that it would take at least three years for the Soviet Union to develop its own nuclear arsenal so, according to his leading spymaster, Pavel Sudoplatov (Special Tasks: the Memoirs of an Unwanted Witness -A Soviet Spymaster p 208) a peace movement was organised to give the Soviets breathing space by campaigning against nuclear armament. It also aimed to derail the US Atoms for Peace program. Most significantly, it inspired a whole new mythology on the dangers of nuclear energy.

Mythology

As the nuclear power industry began to flourish in the West, the Red Orchestras were exhorted to crescendos of disinformation in order that the Soviet’s own nuclear power program would not be disadvantaged. If this smacks of “Reds under the bed” paranoia, we now have their own confession, thanks to glasnost.

It was not only communist sympathisers who were strung along by Moscow. There was no shortage of Western academics and scientists willing to assume the mantle of

doomsday prophets in a trendy anti-nuclear crusade. These self-professed experts traded on the free-world media’s preference for alarming forecasts from any source whatever, rather than the far less colourful views of the great majority of scientists and engineers, with a thorough training in nuclear science, who were well aware of the actual dangers involved. The mythology grew, fuelled by the inevitable reactor accident from time to time (Chernobyl was the first reactor accident to claim more than three lives). No human endeavour is perfectly safe. The fact that, statistically, the nuclear power industry is one of the safest there is - far safer than, say, coal-fired power - is ignored by the media.

One of the more bizarre myths is the so-called China Syndrome, in which a melt-down in a power reactor is supposed to burn its way through the Earth to China. It was the basis of a feature-length movie starring Jack Lemon. If the Chernobyl disaster did nothing else, it undermined the credibility that particular myth.

Activists

Of the Australian activists riding the anti-nuclear bandwagon, the most prominent is paediatrician Dr Helen Caldicott. In her book “Nuclear Madness”, published in 1978 (and recently re-released), she added to the anti-nuclear mythology a few fantasies of her own making. On page 65, for example, she asserts that Plutonium was “Named after Pluto, god of the underworld.” In reality, the first two trans-uranic elements, Neptunium and Plutonium, were named after the two trans-Uranic planets, Neptune and Pluto.

Dr Caldicott claims on page 23 of her book that plutonium “is one of the deadliest substances known.” Restricting the argument to elements only, she should try ingesting thallium. If the scope is extended to compounds, botulin toxin and nerve gas leave plutonium far behind in the toxicity stakes. The highest toxicity of plutonium results from its inhalation, which requires metallic plutonium to be vaporised before ingestion. The total annual production of plutonium could eventually (within half a century or so) kill half a trillion people if all of it were precisely rationed out to all of them and dutifully inhaled. On the other hand, the total annual production of the common gas chlorine could within minutes kill 400 trillion lives if all of it was likewise inhaled (see pp 246-256 of *The Nuclear Energy Option* by Professor Bernard Cohen, in which many anti-nuclear myths are deflated).

More recently another Australian, former CSIRO worker Les Dalton published an alarmist book titled *Radiation*

Exposures: the hidden story of the health hazards behind official 'safety' standards. In it he has a shot at practically every form of radiation that exists, including the current hoo-ha over power line radiation (see Andrew Parle's article in this issue). Like Dr Caldicott's book and others of the genre, Les Dalton is strong on anti-nuclear sources of dubious authenticity and disregards scholarly work having a pro-nuclear stance.

Contrary Views

Three times in his book the anti-nuclear research claims of Rosalie Bertell are cited, but never a mention of Rosalind Yalow who gained a Nobel Prize for her work on the use of radioactive isotopes in medicine. Dr Yalow argues that "an education campaign by knowledgeable scientists will reduce the (public's) phobic fear of radiation and maximise its usefulness in the service of man-kind." (The Nobel Century, p 177)

Why is Dr Yalow's contribution rarely heard, despite her strenuous efforts at public enlightenment? Put it down to misplaced scepticism, by the media in the first place, but flowing on to the general public. The public are justifiably mistrustful of politicians and spokesmen for big business, but unfortunately no distinction is made between them and those scientists of integrity who present reliable information in an impartial manner.

No responsible scientist claims that nuclear energy is absolutely safe. However the dangers are nowhere near as dire as the anti-nuclear movement claim. Release of radioactivity from the highly publicised Three Mile Island accident was of an amount that could statistically lead to one-twentieth of a death by cancer among the adjacent population in their lifetimes. On the other hand it has been pointed out that the psychological stress induced by the alarming anti-nuclear publicity surrounding that event has caused significant illness in that very same population.

Radiation

Everyone on this Earth receives a significant radiation dose from themselves, their food, their surroundings, cosmic rays and medical procedures. Life on Earth developed under higher exposures to ionising radiation than those pertaining at the present day. In some parts of the globe, like places in Brazil, Sri Lanka or Kerala in India, natural radiation exposures are over ten times higher than average. The Scottish city of Aberdeen, built largely of granite, is another candidate. Adverse health effects have been investigated but have not been observed, according to Dr Yalow.

Dr Caldicott, on the other hand, states (p 33) "In Kerala, India, an abnormally high level of radioactive thorium in the soil is believed to be responsible for a high incidence of mongolism and mental retardation." Who is correct? The answer is, at best, equivocal. The fact remains that we survive in a sea of radioactivity and there is actually a school of thought which argues that normal exposure to ionising

radiation (*radiation hormesis*) is essential to the health and well-being of a living organism because body cells have evolved to cope with it. Dr Caldicott takes the opposing view that there is no safe level of exposure to ionising radiation. Again, who is correct?

It is instructive to calculate the rate of decay of the radioactive isotope potassium-40 in our bodies. Potassium is absolutely essential to life. In an average person there are about 200,000 disintegrations every minute, each producing an energetic beta particle and a gamma ray - a double whammy. A further 100,000 bodily radioactive decays every minute are due to naturally occurring carbon-14, polonium-210 and some other minor isotopes. Local councils may proclaim our cities to be nuclear-free zones, but our bodies certainly aren't!

Weapons and Power

Another pervasive nuclear myth is the supposed nexus between nuclear weapons and nuclear power production. The two aspects are as close as a government wants them to be, no more, no less. An example of a nuclear power program totally divorced from weapons production is that of Canada. On the other hand, Great Britain's first nuclear power station, Calder Hall, was also designed to produce plutonium for the British nuclear weapons program. What makes the difference? Well, the neutron flow within a thermal reactor progressively converts uranium-238 to neptunium-239, which quickly transforms to plutonium-239, the best bomb material. Nevertheless as the amount of plutonium-239 builds up, its exposure to the neutron flow steadily converts it to plutonium-240 (by neutron capture). Plutonium-240 is no good for bomb use: it causes a bomb to pre-ignite and fizzle. So the trick is to remove the fuel-rods early, before too much of the plutonium has been degraded to plutonium-240.

Now the Canadian CANDU reactors achieve some of the world's highest fuel utilisation figures, getting the most out of their fuel by having it remain for a long time in the reactor. Plutonium from Canada is of no use for bombs. But the North Koreans set world alarm bells ringing when it emerged that they were removing fuel early from their research reactors. They were sacrificing fuel economy to gain weapons-grade plutonium. This also reveals that a low power research reactor can be a better source of bomb material than a large reactor designed as a heat source for the production of electricity.

Chernobyl

The 1986 Chernobyl disaster shattered some nuclear myths and spawned a raft of new ones. Dr Vladimir Chernousenko, the physicist nominated by the Ukrainian authorities to take charge of cleaning up the mess, wrote a book *Chernobyl: Insight from the Inside* (published by Springer-Verlag) in which he lists no fewer than 21 myths and deals with them all. But those myths were the product of the Soviet disinformation machine which tried to minimise, play down or ignore the health and environmental effects of the disaster.

Dr Chernousenko provides a mass of figures and statistics demolishing the official party line, but setting the damage below alarmist estimates which have been circulated on both sides of the former Iron Curtain. Following his harrowing ordeal with casualties and massive problems with the destroyed reactor, Dr Chernousenko still favours nuclear power to reduce global pollution, demanding that the 15 remaining Chernobyl-type reactors be phased out and replaced by safer western designs.

The Chernobyl death-toll is climbing into the hundreds, and there is little doubt that it will run into thousands over the next half century. As always, later deaths from radiation effects are mostly indistinguishable from “normal” cancers. It is the excess above normal in the contaminated regions around Chernobyl that will in time reveal the true extent of the harm done. At this point it is worth noting that on the very day the Chernobyl story broke (four days after the event) another news item revealed that 2500 lives had been lost in a dam disaster in Sri Lanka. The Sri Lankan deaths were immediate: most of the Chernobyl victims will die later after enjoying fairly normal lives by regional standards. Sri Lankans must be less important humans than Soviet people because their disaster received less than one tenth of the news coverage Chernobyl received, and no more has been heard about it from that day to this. Chernobyl still makes headlines - even the grotesque disclosure that the Ukrainians now conduct on-site inspections of the disaster scene for Western tour groups. It was supposed to be in an exclusion zone for thousands of years, remember?

Nuclear Waste Disposal

Another nuclear myth (one that I did not have time to present at the recent Convention, but which drew many questions afterwards) concerns the safe disposal of nuclear waste. Not a problem, unless absolutely perfect 100 percent removal from the biosphere is deemed necessary, and that is exactly what the anti-nuclear lobby demand. It turns out that nature herself performed a relevant experiment two billion years ago at Oklo in Africa. For two million years a natural nuclear reactor successfully fissioned uranium-235, using percolating ground water as a moderator to support the nuclear reaction. It produced plutonium and fission products galore before it snuffed out. Geologists discovered that despite the flow of ground water the high-level wastes did not migrate very far away from the reactor site.

Anti-nuclear activists contend that vitrification of high-level nuclear wastes in glass is unsatisfactory because its leach rate is too high. They claim that no matter how secure the repository, the chance of a breach, allowing ground water penetration, is unacceptably high. The Swedes responded by developing a copper encapsulation method which seals the waste indefinitely, and here in Australia the late Dr Ted Ringwood invented Synroc, a clever method of locking nuclear wastes into the mineralogical structure of a synthetic rock.

Nuclear wastes sequestered by either technique could be lowered several hundred metres down holes drilled in the ancient rock province of the Australian northwest and forgotten - effectively forever. Up there in the outback is a rock formation which has retained its integrity for almost four billion years and shows no hint of breaking apart in the future. It is difficult to imagine how objections to this solution for nuclear waste disposal can maintain any credibility. Yet it is passionately opposed on the strength of unrealistic and emotive “what if?” arguments.

Conclusion

Enough has been said to suggest that the subjects of radiation, radioactivity and nuclear power are fraught with misconceptions and myths. There is really no substitute for a thorough understanding of this difficult subject, but not everyone can hope to master it any more than every citizen can aspire to becoming a brain surgeon or astronaut. The only recourse is for the average man or woman in the street to adopt an honestly sceptical attitude to all pro- and anti-nuclear claims. As with paranormal phenomena, only claims backed up by sound evidence should be accepted. Right now the greatest credibility rests on the pro-nuclear side of the debate, Chernobyl and Three Mile Island notwithstanding. Maybe that is why our Asian neighbours are committing themselves to nuclear power production to guarantee their future. Or are Australians the wise ones and the others unseptical fools? ■

In the Beginning: the first five years of *the Skeptic*

Our compilation of all the major articles and items from *the Skeptic* Vol 1, No 1 to Vol 5, No 4 is selling well but we do have plenty of copies available for those who would like to gain an understanding about our beginnings and how Australian Skeptics has developed over the years.

Read about our first investigations into paranormal and pseudoscientific claims made in Australia: the hydrogen fusion powered car; the psychic archaeologist, brought to Australia at public expense; our first confrontation with the creation ‘scientists’, astrology, numerology, alternative healing and much more.

Tastefully presented and bound this book will make a handsome addition to your bookshelves and is an ideal gift for your less sceptical friends.

CONVENTION PAPER

Abuse by Whom?

Barry Williams

This is the (substantially modified) text of a talk by Barry Williams at the National Convention.

Introduction

Something very peculiar is happening in the world, and like so many peculiar happenings, it seems to be tied up with sex. (No, I am not talking about goings-on in the British cabinet here.)

This article is devoted to giving a brief, and necessarily incomplete, overview of the phenomenon that is sweeping the United States and which is rapidly infiltrating Australia and other parts of the world. I am referring to is what has been called the “sexual victim industry” and I do not think the term industry is inappropriate in this context. As I am by no means an expert in this field, I would welcome submissions from readers whose knowledge outstrips mine (not a difficult feat), I will look at how these fads are having a deleterious effect on the well-being of our society and will suggest that they really are symptoms of something else. What they are symptoms of, I am not too sure, but I think it is of something which should cause us a great deal of concern and which should attract investigation.

Consider for a moment the following figures, I won't call them statistics, because that exalted term usually refers to figures with at least a modicum of evidence to back them up.

Various sources have estimated that between 25% and 35% of American people, especially women, have been sexually molested in infancy, usually by members of their families and most often by their fathers; that between 10% and 20% of Americans are involved in Satanic Cults which indulge in ritual (read sexual) abuse of children; that up to 10% of Americans have been abducted by extra-terrestrial aliens and have had medical experiments, often of a sexual nature, performed upon them.

Taking the worst case, and assuming that very few people would be unlucky enough to be sexually abused by not only their father, but also by Satan and a LGM from Alpha Centauri, then, if these claims are true, more than two out of every three Americans has been the victim of sexual abuse of some kind or other. And in case you are tempted to laugh at how gullible the Yanks are, the same issues are now being presented as fact, here in Australia, in lesser but increasing numbers.

The linking factor in all these bizarre, and inherently implausible, claims is the suggestion that all memories of them have been successfully repressed by the victims and

the consequent proliferation of ‘therapists’, of varying degrees of training and skill, who purport to uncover these repressed memories.

Family sexual abuse

Probably the most pernicious and pervasive of all these claims, but also the one that is somewhat (albeit not very much) more plausible in a pretty dubious bunch, is the enormous number of claimed cases of childhood sexual abuse by family members.

That children are sometimes sexually abused by members of their families is beyond question -sufficient cases have been proven before the courts, using reliable evidence, to make this clear. Nor is it unreasonable to suppose that the memories of this abuse can sometimes be suppressed. That it occurs in the numbers claimed, and that suppression of the memories is virtually ubiquitous, is, given the ephemeral nature of the evidence presented, highly unlikely.

Typically an adult visits a counsellor with any of a variety of symptoms, often eating or sleep disorders, nervous afflictions, headaches or other ill defined illnesses. Under therapy, long suppressed memories of childhood abuse are revealed and treatment continues. Not unnaturally, the victim then confronts the parent or relative they remember as having abused them and family break-up occurs.

If true, this is all pretty horrifying stuff, but there is very good reason to believe that many of these ‘repressed’ memories are not memories at all. A strong case has been made that many of the so-called ‘memories’ that are being dredged up by therapists are in fact also being implanted by the same therapists. That they are indeed, “False Memories”. The problem may well lie with those who counsel patients, and particularly with those who see everything that ails human beings as evidence of sexual problems.

Anyone who witnessed a recent *Four Corners* program on ABCTV could not have been other than discomfited by a demonstration conducted by a professional hypnotherapist. He convinced a subject who had lived in South Australia before moving to Brisbane that she had in fact been born and had lived all her life in Brisbane. She could not be convinced that she had ever lived in SA and could remember the house in Brisbane in which she had spent her early life. A house, needless to say which had never existed. Nor could she be convinced by her own voice talking about South Australia, which had been tape recorded before she underwent hypnosis. She was very convincing and certainly looked as though she

was convinced that the implanted false memories were real ones.

Which leads to what we know about memory. As legitimate psychologists have reported, memory is not like replaying a tape, all nicely sequenced, but consists of a lot of impressions which can be fitted together in different ways, depending on a lot of external factors. People can repress memories and can have false memories implanted and there is no guaranteed way to distinguish between them.

Satanic cults

Related to the sexual abuse phenomenon in some ways is the Ritual Satanic Cult Abuse phenomenon. This one has been around for longer and seems to be more widespread than the others and takes on some very peculiar attributes.

The way the story goes is that vast hordes of seemingly ordinary citizens are secretly involved in worship of Satan and that these groups indulge in child and animal sacrifices at secret ceremonies. In this case, it is often alleged that members of the groups breed children specifically for sacrifice.

Every now and again the tabloid media go into a feeding frenzy about Satanic cults and run scare headlines to make us all aware of this menace in our midst, liberally larded with demands that the police do something about it. Again, from the *Four Corners* documentary, a former Victorian Police Surgeon explained that police had followed up many claims, raided houses, demolished garages, dug up concrete slabs where people had claimed bodies were buried. In his words, 'not one scrap of human tissue' ever came to light. Proponents of the Satanic claims will, of course, see this as further evidence of an official cover-up.

Readers may be aware of the cases in the UK a few years ago, where the children of citizens of an English city and a Scottish island were removed from their parents, at the instigation of some over zealous social workers, amid claims of Satanism.

What you may not be aware of is that, only a few weeks ago, the report of the commission of enquiry into the affair was presented to the British Parliament. It found that there was no substance to the allegations. I don't know what compensation was afforded to the people who had been falsely accused, but I suspect it was hardly enough to compensate. Of course it may have been yet another official cover-up.

Closer to home, recently I heard Andrew Olle on ABC Radio interviewing a German woman. She claimed to have been brought up in the home of Satanists in Germany and told a harrowing tale of the abuse she had suffered. To this stage, her story sounded plausible and it may even have been true.

She then claimed to have fled to Australia to get away from this danger, only to discover to her dismay that the belief was rife here too. Olle asked her whereabouts, and she named a host of Australian towns and suburbs in which Satanic cults

existed. From the tone of his voice, Andrew Olle did not believe a word of it, and neither did I.

The problem with these claims of Satanic cults is that, if they existed and if they did what are often claimed for them, then there should be ample physical evidence. Women give birth to children who are then sacrificed. No-one notices the pregnancy and the fact that no child results? Again, using US figures, someone has worked out that between 50-100,000 babies are 'sacrificed' each year by these cults. And no-one notices?

Certainly some people confess to being involved in these rituals; rituals let me remind you that consist of the most horrific crimes, yet they are never charged with mass murder? I can believe that if these things happened in an isolated community, then they might get away with it. It is conceivable that the local cop could be bribed or be part of the cult. But a widespread phenomenon as this is claimed to be? This would require a conspiracy of monumental proportions. And those who have read my various soundings-off on the subject of giant conspiracies in *the Skeptic* will know that I don't believe in them, because I don't believe a giant conspiracy could possibly work.

The reasons why I don't believe there is a conspiracy of monumental proportions to keep the truth of the great Satanist plot hidden is that far too many people would have to be involved, from various government authorities to thousands of ordinary people. How do you keep a secret with so many people involved?

Although I have no doubt that Satanists exist, the ones I have seen interviewed seem to treat the whole thing as more of a joke than as a serious devotion to evil. Perhaps I too am part of the conspiracy, but if I am I have suppressed all knowledge of it.

Alien abductions

Even more weird, is the belief in abductions by space faring aliens. This one is more peculiarly American, and it does not appear to have taken on to the same extent in Australia. Indeed, you may remember a story we ran in *the Skeptic* a couple of years ago, in which a member of one of our local UFO organisations called, rather plaintively I thought, for Australians who had been abducted to come forward. It seems that while this phenomenon was gaining great prominence in the USA, he felt that Australians were being unfairly discriminated against. The sort of case one would feel should be referred to the Anti-Discrimination Board of the Galactic Federation.

Again, you don't have to **remember** the abduction itself. No, a very generous therapist will (for a fee) investigate your psyche and will find those deeply buried memories and reveal them to you in all their gory details. As well as the headache, eating disorder, skin complaint and other symptoms that characterise all **earthly** abuse, another sure sign that you have been abducted by some randy Reticulan is that you have periods of 'missing time' in your lives.

Now anyone who has ever taken a drink, or listened to a Parliamentary broadcast, has periods of missing time. The thing that bemuses me about these alien abductions is that the Orionites do not want to abduct us to put us into their zoos nor to test us for taste. No, they too want to know us in the Biblical sense of the word. Almost without fail, alien abductees report after their memories have been restored by their kindly therapists, that the chaps from Canopus have a deep interest in their naughty bits.

And, oddly enough, their noses, (which may in fact be sexual components of alien physiology) into which the aliens unaccountably implant little black boxes. Boxes, which the UFO magazines are always breathlessly promising, will be exposed in all their alien technological strangeness, any minute now. And have been so promising for several years. Strange indeed are the sexual mores of the Galactics. Or indeed the brains of UFO magazine publishers.

It has even been widely postulated that the aliens' purpose is to seek new breeding stock from among earthlings to supplement their declining populations. Many (mainly female) abductees report being impregnated by aliens and having the hybrid foetus removed in a later abduction. Now I am not a biologist, but I suspect that the chances of a human successfully producing a hybrid offspring with an alien, who presumably evolved in an entirely different solar system, would be marginally less likely than producing a crossbred child with a petunia, which is at least related to us, however distantly.

There seem to be a number of linking factors in most of these fads, and there are some very curious differences between them. One is the political bias of the proponents of the various extraordinary claims made.

The idea of repressed memories of familial sexual abuse seem to come from the wilder shores of the Feminist Left. The Satanic sexual abuse is being promoted largely by the fringes of the Christian Right. The political inclinations of the UFO abduction proponents is not quite so clear, although there is a strong element of mistrust of the government. All of them contain strong elements of conspiracy theory.

But the linking factors are what stand out most. The obvious one is sex, which most of the proponents of these fads seem to think is a distinctly unnatural process.

The second prominent link is the proliferation of therapists and counsellors, many of whom seem to have obtained their qualifications from the psychology departments of the same letter boxes whence creationists get their scientific qualifications.

But not all of them are unqualified quacks. Dr John Mack, Professor of Psychiatry at no less an institution than Harvard, is a leading light in the UFO abduction movement. He has been quoted as saying that if people believe they have been abducted by aliens, then they probably have been. He appeared in a recent *Sixty Minutes* documentary, proposing his theories and had quite a few dissenters from among his

peers. One wonders how he reached his conclusions about abductees, and what he thinks about all the Napoleons that consult him?

Let me stress that I am not trying to be flippant about people who have suffered real sexual abuse. Rape of anyone, adult or child, nun or prostitute, male or female, is one of the most vicious and bestial of crimes. The victims of it deserve all of our sympathy, indeed much more than they often get in our society. And the perpetrators of these crimes, particularly if they are against children, deserve nothing but our outrage, contempt and disgust.

But there are potentially other sorts of victims here, and those include the individuals who are falsely accused of these horrendous crimes and who must suffer appallingly as a result. In America, some notable court cases have seen parents accused of these crimes, based on no more than false memories, awarded substantial damages against the therapists their children have consulted.

And this is where the real problem lies. Not that two thirds of the population is being sexually molested, because there is no real evidence that they are being, but that self-proclaimed therapists seem to believe that it is their mission in life to convince people that all of their problems stem from this cause, regardless of what the real causes might be.

Meanwhile, there are people with real problems that have nothing to do with sex, who need real help from real professionals and who are getting this sort of nonsense instead. They too are victims of pseudo-therapy. And finally, there are the people who really are suffering sexual abuse. When the backlash comes, as it inevitably will, then these people will suffer even worse treatment than they do now, because no-one will believe them.

They are all the victims of incompetent therapists and of a society that is all too ready to believe any nonsense they see on TV, especially when some TV 'personality' confesses that all his problems stem from sexual abuse and repressed memories (as far too many TV personalities are wont to). A society that is prepared to overturn one of the first principles of justice - the presumption of innocence. A society that sees nothing wrong with trial by media, fed by a media that sees nothing wrong with using any story to win the ratings, regardless of the damage it may cause to innocent people.

As Skeptics, we need to be aware of the biases of those who propose these horrifying propositions. We need to be concerned that the numbers of therapists and counsellors in our society seems to be proliferating without any regard as to their qualifications. We need to understand the elements in our society that lead to the perceived need for such people. We need to understand a little more about memory and about how to distinguish between what is real and what is manufactured

And finally, we need to be at least as sceptical of these sort of stories as we are of the relatively harmless maunderings of the local tealeaf reader or phrenologist, because they are potentially much more harmful to our wellbeing. ■

ASTRONOMY

Probing a Pulsar

Duncan Steel

How does one know that the pulsar PSR B1257 +12 rotates 160 times a second? The flippant answer to the query posed by Alan Towsey in *the Skeptic* (Vol 14, No 2, p 69) would be “plug a loudspeaker into your radio telescope and listen for the note”. But it’s a little more complicated than that.

Pulsars (or pulsating stars) were discovered in 1967 when Jocelyn Bell Burnell, then a research student at the University of Cambridge, found that the output from the radio telescope that she was operating was in the form of a series of pulses, one every 1.337 seconds and very regular.

The initial thought was that there was some terrestrial (ie, man-made) source of radio interference which was causing the signal, but that idea was soon laid to rest: the source was passing across the sky as the Earth turned. Whimsically the astronomers involved christened the source “LGM 1”, or “Little Green Men 1”.

Within a short time Burnell identified three other pulsating sources in different parts of the sky, implying that an astrophysical phenomenon (rather than an extraterrestrial intelligence) was responsible. Despite the fact that there were no theoretical predictions of such quickly-pulsing sources, it did not take long for a viable model to be invented, which (broadly speaking) is still held to be accurate today.

The theory encompassed the known behaviour of stars, but with a twist in the tail. The energy of stars, including our sun, derives from the fusion of light elements into heavier elements in the stellar centres. In particular the fusion of four hydrogen nuclei to form a single helium nucleus is important. However, the helium nuclei so produced can also fuse to deliver still heavier elements. This chain can continue up through the periodical table of elements until about iron; elements lighter than iron fuse to produce energy (as in a hydrogen bomb), whilst heavier elements break apart or fission to liberate energy (as with uranium or plutonium in an atom bomb). In the very centre of a star this means that once the fusion chain has reached iron or thereabouts, no more fusion energy is possible.

Under those circumstances the energy outflow which supports the star can no longer resist the huge self-gravity of that object, and it will collapse. It’s like kicking the legs out from under a table.

As the various layers within the star collapse (or implode) there must be a condensing and a collision at the centre, the result being an explosion of the star which we call a supernova. Huge amounts of energy - in the form of various wavelengths of electromagnetic radiation, including visible

light - are released, and a shell of matter is thrown out so as to form a nebula.

Back at the centre of the star, many of the atomic nuclei will have been ripped apart in the phenomenal temperatures and pressures produced, leaving a core which is largely composed of neutrons; hence the name, a neutron star.

This remnant core is greatly compacted, such that a star which was originally some millions of kilometres in diameter would then be only ten kilometres across. The densities involved are almost unimaginable: all of mankind would be compressed into a volume no bigger than a pea.

However, there is another important effect of this stellar collapse. All stars spin: for example, the sun takes a few weeks to spin on its axis, as can be seen to be the case if you set up a telescope so as to project an image of the sun onto a screen (but do not look directly at the sun through the telescope, or even with the naked eye) such that you can see the dark areas which appear from time to time. These dark areas, called sunspots, gradually migrate across the solar disk, as the sun spins.

In the case of a star which goes supernova, it must still have the same amount of angular momentum (a quantity which is always conserved), which can only be accommodated by spinning much faster. This is similar to an ice skater who spins slowly with her arms outstretched, but speeds up markedly as she brings her arms in close to her body.

When one does the sums one finds that a neutron star just 10 km across might spin in a period comparable to a second. In a pulsar it seems that the neutron star drags around with it a plasma - a volume of charged gas - which emits radio waves and light. For reasons that are not yet well-understood it seems that this emission is constrained to a beam, which could be likened to the light beam from a lighthouse, scanning across the ocean. One sees the lighthouse flash every so often, and the same would be true for a radio telescope directed towards a pulsar; a series of equally-spaced pulses would be detected.

A few have also been detected using optical telescopes, but for a variety of physical reasons that is much more difficult. To witness the pulses detectable with a radio telescope you just need a little money. In fact \$50. The Australian \$50 note features both astronomical and agricultural science, and on one side appears pictures of Ian Clunies Ross (an agricultural pest expert), and also the Parkes

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REVIEW

Chilling Cults

Julie Marlow

Dangerous Persuaders: An expose of gurus, personal development courses and cults, and how they operate in Australia., Louise Samways (Penguin \$12.95)

Ironically enough, I bought this book at my local New Age bookshop. This shop is also a haven for practitioners of every kind of loony persuasion, most of whom ply their trade behind a beaded curtain at the back of the shop. One of the gems on offer this particular day was “Psychic Healing Through Foot Massage”, a concept which had me giggling for hours afterwards. The owner of the shop is, as you might expect, a benign bearded soul. I asked him if he had read “Dangerous Persuaders”, to which he replied earnestly, “No, not yet, but I intend to.” Well, I imagine if he has, it would have given him cause for much discomforting reflection on the business he has chosen to be in.

Louise Samways is a Melbourne based psychologist who straightforwardly admits that this book is not the result of an in-depth academic study, but rather the result of reported experiences by people who have suffered as a consequence of their involvement with cults and personal development courses, and who are currently undergoing treatment with the author.

There are, she says, consistent patterns which emerge from these reported tales of woe; enough similarities to compile this no-nonsense dossier of the collective *modus operandi* of the many thousands of suspect individuals and organisations operating under the personal growth banner in Australia today.

In the preface to this book, Louise Samways contends that personal development courses alone account for one billion dollars worth of revenue per annum in Australia - and that's only the revenue that is declared and can be accounted for. This is a quite astonishing figure. Who are the people willing to part with often large sums of money in a vain attempt to transform their lives?

There are clearly many lonely, vulnerable people in this country who are sincerely looking for anything to make their lives better and brighter, something which will give them an increased sense of self-worth. And there are also many charlatans who are more than willing to exploit this vulnerability, and in the name of self-help, personal growth, call it what you will, strip these people of their money and any shred of self-respect.

It is difficult not to adopt a slightly superior attitude to those who are gullible enough to be taken in by the spurious

claims of many of these personal development courses and cults. Intelligent, clear-thinking people may well feel that a few well-chosen words of enquiry, a few probing questions would be enough to bring to the surface any potential problems.

Not so, says Ms Samways, in a chapter on “Who Is Vulnerable”. In fact, “it is dangerous to assume that because you are an adult responsible for your own life, that this somehow makes you immune from being manipulated”.

Ms Samways gives us a number of case histories; people who are or have been her patients. All of these are quite chilling accounts of completely ordinary people who have had their lives ruined by courses and cults. A typical history: a middle-aged man, happily married with three children. He is a corporate achiever, an over-ambitious executive always striving to meet his self-imposed goals. He subscribes to a weekend course, which ostensibly purports to improve his business skills. Sleep deprivation, a sense of warmth and well-being fostered by the close attentions of the “facilitators”, hours of talk about himself, his goals, his fears and frustrations, lead him to come out of the course on an artificial high, feeling he has no limitations. His life will henceforth change for the better as a result of the amazing “mind-power” techniques he has learned. He feels he has outgrown his family; he leaves his wife that very week, and shortly afterwards is fired from his job due to his over-bearing arrogance. He then spends the family money on a series of disastrous speculative ventures, at the instigation and encouragement of the course leaders.

He becomes a seminar junkie, addicted to the highs these courses artificially induce, and over the next two years spends over \$20,000 on courses. His family life is irreparably damaged, he has declared bankruptcy and is now trying to piece his life back together painfully and slowly.

This story is awful for its mundanity; an ordinary person seemingly in control of their life, who goes to pieces after a weekend away. His own fault, many would be tempted to think. Serves him right. But Louise Samways points out that it is the type of technique often used in many of these courses, without “informed consent”, that makes them so dangerous. Informed consent means that potential recruits would be pre-warned that psychological techniques may be used, the aim being to change their beliefs, and that in certain cases the reaction may be harmful. Of course, this never happens, because there is no legal requirement for it to happen.

She describes some of these courses, most of them

emanating, like so many other undesirable aspects of modern life, from the USA. Many have already had significant media exposure; Scientology; Reiki; Money and You; Forum; and a purely Australian phenomenon, Kenja, the husband and wife outfit which has been investigated in an earlier edition of this journal.

The techniques used by these and other groups are similar, and highly dangerous when used by untrained people. The overwhelming majority of people "leading" or "facilitating" these courses have had no training whatsoever in clinical psychology, or any other discipline which would qualify them to mess with people's minds. Indeed, many of them are quite unaware of exactly what it is they are doing, having absorbed the jargon and technique from their own particular guru, and re-hashed them to apply to their own power trips and money-making scams.

The author describes the method by which group leaders and course facilitators manipulate beliefs; among them, various forms of hypnosis, some of which are unproven and experimental, with potentially disastrous psychological results if used indiscriminately:

Isolationist strategies; undermining and deliberately ridiculing people to unsettle and confuse; and a particularly worrying development which is beginning to be used in business and the media - NLP

Neurolinguistic programming, or NLP, involves the minute extensive analysis of body language, eye movements, posture etc., in order to "read" a person or group assembly, and thereby adopting what is considered to be the appropriate language to steer them in a particular direction or encourage the adoption of a set of beliefs. There is a revealing passage where Samways clearly illustrates how effective NLP can be in political campaigns. For example, the use of language in Paul Keating's pre-election speeches compared to the drier delivery of John Hewson. Advertising, an industry not noted for its adherence to moral or ethical codes, is increasingly and shamelessly using these methods to communicate a message. Samways concludes, "Free speech does not exist when that speech is given in a way that deliberately inhibits the listener's critical evaluation of what is being said." Hear, hear.

Alarming enough, anyone can set themselves up as a psychotherapist or a hypnotherapist, and here we come to the thrust of the argument. It is the complete lack of government regulation in this area which is cause for great concern. Were there more regulation and more public accountability required by these groups, many of them would be forced to disband. Ms Samways urges concerned members of the public to lobby their local MPs and complain to the Ministry of Consumer Affairs. It is her view that more people do not so because they are afraid of retribution, such is the fear that some of these organisations instil in their followers.

One could argue that the people who suffer most at the hands of the more unscrupulous organisations may have an existing tendency to dependence in other areas of their lives, and are therefore sitting ducks, overly susceptible to

suggestion and manipulation. Even more so when there is a strong desire to believe that what you are subscribing to somehow holds "the answer"

Louise Samways stresses strongly that this is not the case. She is not willing to put herself, a clinical psychologist who trained for twelve years to get her qualification, into a group situation in one of these courses, armed as she is with detailed knowledge of the techniques that are being used. This is a persuasive argument for how effective and powerful their methods are. She does, however, posit a series of clear, concise questions to be asked by anyone thinking of attending any of these courses and seminars, questions which, if the group is legitimate, should elicit a series of answers which would allay any misgivings.

Ms Samways has written a lucid, intelligent book, a no-frills approach to her subject which is both fascinating and disquieting. It's also a "how-to" manual for those who are about to dabble in a bit of so-called life-improvement by these methods. It is this aspect of the book which I suspect would have the least impact. The people who most need to read it, sadly, I believe, won't. ■

... Pulsars from p 30

radio telescope. At the far left on that side is shown the trace of a pulsar detected from Parkes, a pen-chart recorder plotting out a series of equally-spaced pulses (the time axis goes up and down) of more-or-less equal strength (the amplitude goes left to right).

Later observations have turned up numerous "millisecond pulsars", which spin many times each second and thus produce regular pulses of radio waves, the pulsations occurring in time-gaps comparable to human-detectable audio frequencies; hence my opening remark.

Although the sounds we hear in everyday life are usually due to waves of sinusoidal form, a series of distinct pulses at a frequency greater than your threshold - about 20 Hertz (cycles per second) when you are born, getting worse as you age - is audible. Of course radio astronomers do not really plug loudspeakers into radio telescopes and listen for distinctive notes - there are much more sophisticated and effective ways of picking up the pulses - but broadly that is how we know that the pulsar in question is spinning 160 times a second: from the note it emits.

Another question posed was how one measures time spans of a billionth or a trillionth of a second. I'm going to leave that one for someone else to answer in detail, but I note that it's not really that difficult. In a billionth of a second, light or radio waves travel 30 centimetres, and that's long enough to measure with a ruler, although you'd need a pair of callipers to measure the 0.3 millimetre that light travels in a trillionth of a second.

All I'm trying to say is, that one should not think merely in terms of what one recognizes as a clock when thinking about time measurement: there are analogues which can be used. ■

REVIEW

Language - Instinct or Invention

David H Lewis

A new book by Professor Steven Pinker called *The Language Instinct* reopens the intriguing question of the origin of human language - what biologist Gaylord Simpson describes as “the single most diagnostic trait of mankind”. In a generous review of this book, Pam Peters of Macquarie University, uncritically accepts Pinker’s fundamental thesis that language is an exclusively human attribute and refers approvingly to Noam Chomsky’s idea that “babies are born to speak”. This of course, echoes the title of the book and affirms the age-old popular prejudice that language is a natural endowment that distinguishes humans from all other species. In current computer jargon we often hear references to our being “hard wired” for language, as if our cousins the apes and any other number of other animals are not. That this should still be argued is surprising for several reasons.

Firstly, it smacks of the traditional anthropocentric religious view that man was created in God’s image “to have dominion” over every other creature. Second, to say we have a unique instinct for language sounds suspiciously similar to the Cartesian arguments equating language with reason and reason with the possession of a soul. (Descartes argued that if some animals appear able to reason then they must, like humans, have an immortal soul. Since what is true of some must be true of all, we must then allow that oysters are immortal! Since he couldn’t countenance this possibility he classified all animals as mere automata and humans as the only reasoning beings. Despite its obvious flaws, this view has had a profound and enduring influence.) Thirdly, although Pinker dismisses them as “theatrical demonstrations”, it is very difficult to ignore the fact that our cousins the apes have shown themselves well able to manipulate sign language intelligently and *inventively*. Even more embarrassing to this cherished notion of uniqueness are the many instances of birds that can use the spoken word itself, again, often with intelligence and inventiveness. An especially good example is Alex, the African parrot, who can wield a vocabulary of some 100 words. Fourthly, the sharp focus on *spoken* language deflects attention from the intimate relationship between words and gestures which is vital to an understanding of the origin of language.

While Darwin administered a rude shock to our view of ourselves as a part of and above the rest of creation, Pinker’s argument still seems to be an attempt to salvage some of that old superiority. Yet nothing since Darwin has suggested that we, as a species, have any fundamental distinctions other than language and even that may be illusory. To argue that

language is instinctive is not far removed from saying that it is a gift from God. While this is not very scientifically satisfying these days it is no more satisfactory to posit language as instinctive because that still avoids the necessity of explaining how the facility for language originated in humans. Pinker sidesteps the whole question by admitting “The first steps toward human language are a mystery”.

He compounds this by derisively dismissing the “fanciful speculations” of the nineteenth century philosophers. Most of these ideas were indeed thoroughly fanciful but he seems totally oblivious to the arguments developed by some of the Enlightenment thinkers of the 18th Century, notably Condillac, Reid and Mondobbo, to the effect that language must rather be regarded as an invention. These ideas have been subject to such misrepresentation and consequent derision in the subsequent centuries that these days they are scarcely considered at all. Yet they have hardly been bettered in the last 250 years. Perhaps, then, it is time to restate them, lest we are too easily seduced by the fashionable but essentially spurious ideas of Chomsky, Pinker and others who argue for the instinctive hypothesis.

Even though Rousseau was not unsympathetic to the idea that language could be an invention, his famous paradox is sometimes quoted to discredit the idea. Rousseau’s paradox states that “Words seem to have been necessary in order to establish the use of words”. In an age that could comfortably attribute language to God’s original creation, this seemed to rule out any inventiveness on man’s part and to be the end of the matter. However, from our perspective of assuming that man-kind appeared through a long evolutionary process we are forced to consider how language could have arisen by more natural means. Attributing it to an exclusive “instinct” or “the extensive resources of the deity”, as Professor Wells puts it, does not excuse us from examining when, how and why language arose in the first place and at first glance, Rousseau’s paradox appears to pose a difficult problem.

Professor Pinker possibly had something like Rousseau’s objection in mind when he said in a recent radio interview, “I don’t think it [language] was invented at any point in human history by some genius and then transmitted like agriculture or the wheel”. That he should think in such terms as a ‘point’ in history and ‘a genius’ again suggests that he is quite unfamiliar with the theories of the Enlightenment thinkers. That he also admits “there must have been some language that was spoken by the first hominids that had language” seems to beg the question of how that language originated.

What alternative then do we have to instinct or divine intervention?

In 1746 the French priest and philosopher, Abbe Condillac, proposed a model much along the following lines. The first interaction between humans (as it still is between animals) was probably simple self evident natural gestures and noises *not originally intended as a conscious means of influencing or communicating with another party*. However, at some stage it would have been noticed that a particular gesture elicited a specific desired response from those around and this secondary effect may in time have come to be exploited. Say for instance one female reaches for a fruit just out of her reach. Her companion who is better placed might see her difficulty and by some natural or accidental empathetic impulse, pass the fruit to her. The original action would not have been intended to solicit help but the fact that she noticed that it produced a beneficial effect was crucial. Thus rewarded she would be encouraged to repeat the gesture *for the purpose of exploiting the beneficial secondary effect*. Here then is the seed of language - that one individual has noticed that a particular action can influence the behaviour of another to their advantage.

At first this deliberate employment of a particular gesture to influence her companions would be closely allied to the situation of, say, fruit gathering, that is, it would have a very familiar context. However, with repeated use and imitation by others the original gesture of reaching for a piece of fruit could become stylised, abbreviated and gradually also understood in other situations (ie pass me that stone). To take advantage of this gesture obviously required some intellectual facility as well, but it is not unreasonable to suppose that the faculty to communicate by gesture slowly developed in step with an intellectual appreciation of its possibilities.

Similarly, (though probably much later and in conjunction with gestures) an initial inventory of natural sounds - hoots, coughs and grunts - could have slowly developed in much the same way to gradually form the basis of an incipient vocabulary. Their combination with established gestures and familiar contexts would have given them meaning and most of us quite naturally reinforce word with gesture, even today. It seems then, as though too close a focus on spoken language has possibly obscured the intimate and interdependent relationship between word and gesture. Not only has this set up an entirely artificial distinction, but it has lured most modern thinkers to overestimate the importance of words, almost to the exclusion of gesture. As Wells remarks in his *The Origin of Language*, "the problem ... is not, as has often been supposed, that of how *sounds* could become the signs of thoughts, but of how men discovered how to guide or influence the behaviour of their neighbours *by any means whatsoever ...*". (My italics)

Although we have been unrewarded by efforts to teach primates to speak we must remember we have dealt with only one generation. Our early ancestors had innumerable

generations in which to develop the muscular co-ordination required to produce a variety of sounds and this could surely have progressed in step with the intellectual development necessary to take advantage of speech. Once the use of sounds was discovered and used deliberately, their advantages were manifold: they do not require a clear line of vision; they offer little interference with other activities; they attract attention and they are effective in the dark and at a distance.

Richard Leakey in his *The Making of Mankind* draws a possible parallel between stone tool technology and man's intellectual capacity for language. He describes several milestones in the growing sophistication of stone tools that could well reflect early man's emerging intelligence. In accordance with evolutionary processes generally, progress occurs in accelerating steps and plateaux.

From their first appearance as very crude artefacts over two million years ago, stone tools "suddenly" progressed to the teardrop shaped Acheullean hand axes one and a half million years ago. These persisted until the more efficient Levellois technique was invented about 150,000 years ago and this led on to the delicate Mousterian technique of the Neanderthals at around 40,000 years when they also began to exploit bone tools. From this time on we begin to find burials, cult objects and cave art, all of which suggest a blossoming culture which must have depended on a considerable degree of communication. The point of all this is to illustrate the time span available to our ancestors to slowly capitalise on the original embryonic invention of language. That the original invention may have been quite fortuitous and our early ancestors quite oblivious to its full potential is quite in accordance with the nature of inventions generally. Thomas Newcomen or Richard Trevethick could hardly have imagined the revolutions their inventions would set in train.

This emphasis on 'deep time' avoids the inference Professor Pinker appears to have drawn - that language may have been invented at a stroke by "some genius". The deliberate invention of new words probably did not take place until a certain 'critical mass' of sounds and gestures had arisen more or less spontaneously, through a mixture of happy accidents and intelligent observations and reactions.

This model solves the objection of Rousseau's paradox - that words were needed to establish the meaning and purpose of words - because in the very first place words and gestures would be determined by a combination of chance, repetition, inspiration, imitation, context, combination, convention and "deep time". Early man did not have to discuss the meaning of a reaching or grasping gesture because it was very familiar and self evident anyway. Nor presumably would he have had to discuss what was intended by a grimace and a growl through bared teeth or say, a cry of pain. Repetition of these things in a well recognised context could eventually render them comprehensible in other situations where they would elicit the same type of response - i.e. assistance, avoidance or desistance. Thus a convention of understanding certain gestures and sounds would grow up within a group and in

time come to be abbreviated and stylised - often almost beyond recognition. That this is a continuing process is well exemplified in modern language by the popularity of acronyms. To give a more archaic example, few people would recognise that the common expletive "bloody" derives from the Medieval oath "By our Lady".

In all these respects then it can readily be seen that early man was hardly distinguishable from many animal communities that we can observe today. Each has an, albeit limited, range of signs, gestures, grimaces and cries that convey some meaning to others in the community and affect their behaviour. The difference between ourselves and a group of animals in terms of language then, is one of degree rather than kind. The fundamental function of language is still the same - to deliberately influence the behaviour of others through word, deed or demeanour.

That we have now developed such a sophisticated set of spoken languages obscures that fact that in its essentials we share this capability with many other animals. Perhaps the most celebrated examples amongst our close relatives are the success we have had in teaching chimpanzees to communicate by sign language (in contrast to our failure to teach them to speak). Animals like Washoe have shown themselves capable of assimilating a large vocabulary and manipulating it inventively. While she seems to have little concept of syntax as we understand it she is nonetheless well able to communicate her intentions and desires very effectively.

In a similar way reasonable communication can be effected between people of different languages with no knowledge of each other's grammar but a smattering of their vocabulary. Even more striking is Professor T Barber's account (in his *The Human Nature of Birds*) of Alex the laboratory parrot's ability to effectively communicate verbally with his spoken vocabulary of some one hundred words. Alex can accurately answer (and ask) questions about colour, shape, texture and numbers up to six. He routinely asks for favourite toys, foods or tools and will refuse a wrong response with a "No" and a repetition of his request. Just as Washoe invents new combinations of signs, so Alex can invent new words such as "rock nuts" for a Brazil or "rock corn" for dried corn and will even tell his interrogators to "Go away" when bored. In short, he has learned to actively control his life through the medium of the English language.

These experiments illuminate a fundamental difference with Chomsky who sympathises with thinkers like Descartes, Herder, Schlegel and Humboldt who all believed language to be uniquely human and related to the soul. Chomsky's ideas on linguistics have earned him a formidable reputation and he has been described as possibly "the Galileo of the science of the mind". One of his principal tenets is that regardless of our ethnic language we are imbued from birth with a kind of universal grammar which enables us to perceive the "deep structure" of a sentence or speech. Given his struggles with the perversities of even English grammar it is

hardly surprising that he concedes "discovering the principles of universal grammar ... (is) the most challenging theoretical problem in linguistics" (ie He hasn't yet done it!). Against Chomsky, RE Englefield (In his *Language: Its Origin and Relation to Thought*) wryly remarks that when so many people can communicate quite happily without the benefit of any formal grammar, if we inherit our grammatical rules "it is surprising how many people learn at an early age to suppress them".

Englefield goes on to suggest that Chomsky's view have gained considerable favour (even though few people are able to easily penetrate them) because they appear to represent a more attractive alternative to the behaviourist school of JB Watson which is perceived to equate human behaviour with laboratory rats. Although we can no longer, like Descartes, plausibly point to the possession of reason (and thus soul) as the definition of our humanity, Chomsky and Pinker still appear to offer something innate and mysterious to distinguish us from the rest of the animal kingdom. But however comforting that notion may be, it is very difficult to believe with Pinker and Chomsky that humans are exclusively predisposed to develop language through a unique "instinct". Indeed, following Condillac, Englefield lucidly explains how an animal little smarter than the modern ape could progress from a natural gesture language to invent a spoken and later a written language.

Far more plausible than Pinker's instinctive hypothesis then are the long neglected and oft misrepresented ideas of Condillac that language is an invention. Although humans have refined it to spectacular effect it nonetheless remains a distinction of degree rather than of kind. ■

WA Skeptic Meetings

The Western Australian Skeptics advise us that they hold bi-monthly meetings at the Grace Vaughan Centre, Sheraton Park on the last Tuesday of the month.

The September 27 meeting will consist of a talk on "Educational Kinesiology", the subject of articles in recent issues of *the Skeptic*.

The November 29 meeting will hear Dr John Long on fossils and Dr Ken McNamara on evolution. Both men are from the WA Museum and have been obtaining a great deal of media interest.

Dr John Happs, President, and the WA branch was the subject of a supportive report in *The West Australian* early in August. We have noticed an increase in enquiries from the West in recent months and can only say to our Sandgroper colleagues, "Goodonya. Keep up the good work."

Contact the branch at 15 Justin Drive, Sorrento 6020 ■

ANCIENT HISTORY

Young Harry was ‘004’

Harry Edwards

A more bizarre headline worthy of the *National Enquirer* would read:- “Teen-age spy sinks German U-boats”. Either way, while this story has absolutely nothing to do with the paranormal, it does deal with an extraordinary claim, one for which if there were no evidence to substantiate it could easily be dismissed as an incursion into the fanciful world of Walter Mitty. I am motivated to tell the story because in my recently published books (*Magic Minds Miraculous Moments* and *Skepton*, see Vol 14 No 2 p64), under the heading “about the author”, I claim to have “served as a Radio Communications Officer with the British Secret Intelligence Service during and after the war.” (to pre-empt any facetious BW comment - that’s the war in Europe 1939-45).

Notwithstanding the frequent snide references to my dotage by a certain member of the National Executive (name withheld to protect the guilty) those familiar with my true age (which any pretentious numerologist can calculate by knowing my date of birth to be October 30, 1927), may say, “hey, wait a minute, with Germany’s capitulation on May 8, 1945, this guy was only 17 years and 6 months old when the war ended and he claims to have served in that capacity both during and after the war.” It would be perfectly natural therefore, to view this claim with some scepticism. However, given that I am, with all due modesty, a high profile sceptic who spends much of his time investigating outlandish claims, it would do little to enhance my standing in the sceptical community and indeed be foolish of me to make that sort of claim if I could not substantiate it.

After half a century, evidence in the form of anecdotal testimony would be difficult to obtain, most of my former colleagues are long dead or at least in their 80s and virtually impossible to trace. In any case, that type of evidence is not viewed favourably by sceptics, so none is proposed. My evidence is documentary, the originals still in my possession to support my unique claim should it be disputed, to have been the youngest ever British Secret Service Agent, number “004” Still sceptical? Read on for the how, why, what, when and where.

Prologue.

My late father was an avid amateur radio ham, the walls of his den festooned from floor to ceiling with “QSL” cards acknowledging his contacts with other amateurs in every quarter of the globe. His home-made rig - a simple three valve receiver and a 10 watt “bread-board” transmitter, fascinated

me as a youngster - the big hand-wound plug-in coils, the glowing filaments of the vacuum tubes, the multi-coloured ‘spaghetti’ covered wires, the humming power transformer, the winking neon tube looped around the aerial feed line and the large interleaved plates of the tuning condensers which, with the minutest turn of the slow motion dial, could pluck CW signals from the ether originating in nearby continental Europe, across the Atlantic or even the far-east and Australia.

Although I was more interested in the stamps that came on Dad’s QSL cards, I did become familiar with wireless components (now only seen in museums), learned the Morse code and the inter-national “Q” code.

The latter being a three letter code universally adopted by commercial and amateur radio operators alike to abbreviate frequently used questions and answers - a sort of shorthand. For example, QSA? (what is the strength of my signal?), QTC 2, (I have two telegrams for you), and so on. In hind-sight, it is a sobering thought that my basic introduction to wireless communication would one day play a not insignificant part in the war effort and send many of the enemy to their graves.

Initiation

1938 saw international relations in an already tumultuous world deteriorate to the point of no return. Germany annexed Austria and the Sudetenland, the Japanese had over-run China, Italy’s presumptuous Caesar declared Libya and Ethiopia to be part of the new Italian empire, the bloody civil war in Spain continued with General Franco’s offensive in Catalonia, and Len Hutton scored 364 runs against the Australians at the Oval Test Match. (Baby BW ate his heart out!).

My father at this time was employed in the Wireless Section of New Scotland Yard and although the traffic he was handling was in cipher and Top Secret it appeared to have little if anything to do with normal police communications.

While his curiosity was satisfied one day when asked to show a visitor around the wireless room, the future ramifications for him and his entire family would never have occurred to him in his wildest dreams. Dad learned from the stranger that they had spoken before although they had never personally met. The visitor was a Secret Service wireless operator formerly stationed at Guernica, Spain, destroyed by Spanish rebels (and the German and Italian air forces) on April 27 in the previous year. My father had been on the receiving end taking his reports from that beleaguered town

during the civil war hostilities.

The two built up an immediate rapport and “Uncle Bill”, who was looking for accommodation, came to board with us as a lodger.

As an eleven year old I found Uncle Bill fascinating company, he taught me how to use a compass, field craft, astronomy and how to navigate by the stars. He enthralled me with tales of his adventures in South America, and was sorely missed when one day he announced his departure never to be heard from or seen again.

His legacy however influenced the course of my entire family’s lives. On his recommendation my father left New Scotland Yard and became the eighth member of an elite group known in the British Foreign Office only as Section 8. Under the command of Colonel (later Brigadier) Gambier-Parry, they were stationed in embassies and consulates abroad and were responsible for the transmission to London of intelligence gathered by our field agents. Between 1938 and 1941, Dad’s assignments included Riga, Stockholm, and Oslo.

Young Harry

When war was declared on September 3, 1939, my father, mother and young brother were in Oslo, I was still at school in London and planned to join the family during the Christmas recess. Due to sail at the end of the year, my aunt with whom I was living at the time, refused to let me go because it was “too dangerous.” It was an awful truth - the ship was torpedoed crossing the North Sea -there were no survivors.

On April 9, 1940, the Germans invaded Norway. My mother and brother were evacuated to Stockholm for safety, Dad (later revealed to be on the Nazi’s wanted list) fled north with King Haakon and his entourage. The Royal party’s sole radio link with the outside world, hounded and strafed by German aircraft, Dad was blown up, rescued, and repatriated from Narvik to England by submarine.

Suffering from shell-shock, his nerves were shot to pieces. His thanks - six months in a psychiatric ward and a home station job at Bletchley, in Buckinghamshire, for the duration.

Meanwhile young Harry had been evacuated with his school to Tenterden in Kent, an unfortunate choice, for when the German bombing began in earnest the area became known as bomb alley - the dumping ground for bombs intended for London. In its wisdom, officialdom decided that the evacuees would be safer elsewhere so we were re-located just outside of Plymouth - the worst bombed city in England outside of the capital.

Education was a farce. Housed in church halls, 45 pupils to a class and one teacher between two classes, I can honestly claim to have received the most basic of educations. I am an academic ignoramus, a statement with which BW heartily concurs, and has on numerous occasions im-pressed upon me! (On the plus side however, this does afford me an excuse for the occasional grammatical *faux pas*!)

My religious instruction too was imparted in like diverse

manner. Pre-war I had attended Sunday School and listened spellbound and unquestioningly to stories of miracles. In Kent, I attended a Unitarian Church and, despite the passage of half a century, can affectionately recall the image of a young, one-armed, down-to-earth, bespectacled minister, who allowed me to use his typewriter. Then, while billeted with a strict Methodist Cornish family in my early teens, I began to wonder why God deemed it necessary for me to attend a church service four times in one day, listen to two services on the radio, and not shave, cook, wash, work or read a newspaper on the Sabbath.

In December 1941, my mother and brother left Stockholm to return home overland and by sea via Finland, Turkey, Syria, Iraq, India, South Africa and the West Indies. The latter was a nightmare journey during which life-jackets were worn twenty-four hours a day and with three ships in the convoy lost to German U-boats.

United for the first time in nearly three years, we settled down in Cornwall, and then in 1943, moved to a tiny village called Whaddon, in Buckinghamshire, where my father (in uniform wearing the insignia of the Royal Corps of Signals and a major’s crown) was now stationed. It should be mentioned here that during the war, members of Section 8 were specially attested and wore service uniforms to protect them from being singled out for interrogation in the event of a successful German invasion. They were not subject to the “King’s regulations”, and my father’s uniform was unique in so far as he was the only member of the armed forces normally in khaki, allowed to wear a blue cotton shirt - he was allergic to wool.

Not yet sixteen years old, without a decent education and with only the call-up to look forward to, my prospects looked pretty dim. However, the old adage “it’s not what you know, but who you know” came to the rescue. Through Dad’s influence I obtained an apprenticeship in the wireless workshop section of Section 8 located locally at Little Horwood, manufacturing the transceivers used by our agents.

There were two main versions, both housed in leather suitcases - the Mark V and the Mark VII, the latter the size of an attache case was considered small in its day but would be seen as cumbersome compared to the miniaturised electronic wizardry of the 90s. There is a Mark VII on display in the war museum in Copenhagen, Denmark, its manufacture erroneously credited to the USA.

In my spare time during the six months I laboured over a soldering iron, wire strippers and pliers, I diligently applied myself to practising sending and receiving Morse code and learning operating procedures until the day I could send and receive proficiently at speed.

An interview with Major (later Colonel) Harold Gibson, head of the section located at Broadway, London, ensued; the Official Secrets Act was signed, and I have every reason to believe that at sixteen years of age I became the youngest ever member of Section 8, MI6 counter espionage. While

my acceptance into MI6 may be perceived as nepotism, some ability to function efficiently in that capacity must also be conceded as a prerequisite.

In 1938, Harold Gibson was the MI6 resident at Prague, and in conjunction with the Polish secret intelligence service was a principal player in obtaining an Enigma machine, [a mechanical ciphering device] leading to Ultra, [the deciphered intelligence] which enabled the allies to read virtually all top-secret German communications. The part played by Harold Gibson has never received any publicity, yet his was undoubtedly a major contribution to the successful conduct of the war.

We were located in a Nissen hut in the grounds of Whaddon Hall, a stately old Victorian mansion and the country seat of Sir Selby Lownes, about five miles from Bletchley where the Enigma machine and the cryptanalysis staff were located.

The hut contained a couple of teleprinters connected to Bletchley Park, (some telegrams were carried by motor-cycle dispatch riders [Don-Rs]), operating positions for two dozen men, a console for connecting various directional aerials to those positions, and a schedule board on which the stations and contact times were recorded. Three shifts worked around the clock seven days a week. Telegrams were predominately in cipher, varying in length from a few groups to several thousands. Some lengthy telegrams, usually to Moscow or Washington, were transmitted on high speed creed perforator machines. Many of the locations listed on the schedule board were familiar (including Brisbane and Melbourne - the Poms spying on the Aussies?) some were not.

The staff were mainly first class naval telegraphists the others seconded from the army and airforce. Some of the old hands were still in mufti.

The priority of a telegram was indicated by the inclusion in the preamble of a letter code classifying it as "urgent" "immediate" or "most immediate". Plain language was strictly forbidden so as not to compromise the operator. This was really pointless as individual keying styles are as recognisable as hand-writing and direction finders do the rest. German wireless operators sometimes gave themselves away by signing off their transmission with "HH" (Heil Hitler), and the only plain language telegram I ever received was a cryptic weather report from an agent in Gdansk (Danzig) -it was also his last.

My day of fame

In mid 1944, with some other members of my watch, I was put on a listening alert. An agent located at Vigo on the Atlantic coast of Spain (a harbour used by U-boats to carry out repairs and re-fuelling) had indicated in a previous telegram that a top priority message was forthcoming at the next scheduled contact.

Atmospheric conditions were atrocious that night, QRM (interference) was bad and at the best of times Vigo's signal rarely exceeded strength 2. I was the first to make contact

and although the signal was fading in and out and punctuated with ear bursting claps of atmospherics, after requesting some groups be repeated several times managed to take down the short transmission. It was rushed out of the office and I thought no more about it.

A few days later I was told by the charge-hand that the Brigadier wanted me up in "the Hall." My apprehension was allayed when the Brigadier proffered his hand and offered his congratulations. He told me that the telegram from Vigo had been for the Admiralty informing them of the imminent departure from Vigo harbour of three German U-boats. Forewarned, the navy intercepted them and all three were sent to the bottom of the Atlantic. It was never the practise to disclose the contents of telegrams to the operators, information was obtained on a need to know basis and through scuttlebutt. It was therefore, a rare privilege to be told anything. I was still in my seventeenth year.

As the Russians converged on central Europe from the east and the allies from the west, some of us were given overseas assignments. My father and I drew Prague.

My passport and Czechoslovak visa were issued on February 28, 1945, together with an Egyptian transit visa as it was envisaged we would be travelling via that country. These were later cancelled and another Czech visa issued on March 26. On May 7, General Jodl made the final capitulation of Germany to General Eisenhower near Reims; Field Marshal Keitel surrendered to Marshal Zhukov near Berlin on May 8, and on May 9, the Russians took Prague, the allies halting at the demarkation line at Pilsen.

004

On June 2, together with the newly appointed ambassador to Czechoslovakia, Philip Nichols (later Sir Philip) and his staff, we took off from Croydon airport in a camouflaged DC 3 for Pilsen approximately 100 km west of Prague. While the plane was re-fuelling at Brussels my father was taken seriously ill and I continued on alone.

Pilsen airfield from the air looked like a dump for aeroplane wrecks, they littered both sides of the runway along with other war debris.

On landing I was introduced to two members of the Special Operations Executive (SOE) Sgt John Polly and Queen's Corporal "Buggsy" Burgoyne, who were to accompany me the rest of the way to Prague. On arrival we checked into the Ambassador hotel in the Václavské Náměstí, then proceeded across the Karlovy Most (Charles Bridge) to III Thunovská 14, where the British Embassy stood in the shadow of Hradcany Castle, Prague's most famous landmark. Russian troops were in evidence everywhere, particularly on the bridge where they were shooting at ducks with their automatic weapons. Here and there could be seen the odd bloated corpse of a war casualty floating below in the Vltava River. On arrival at the embassy building we set up our respective radio stations on the top floor and established contact with London.

For the next few weeks until my father was well enough to travel again and join me, I was solely responsible for the transmission and reception of all embassy communications in addition to the usual intelligence reports and a daily newsletter.

Back in his position as Chief of the Visa Section (the usual cover for a resident chief of MI6), was Colonel Harold Gibson, and his deputy, Major Keith Zeigler. Identity cards issued to the staff listed one's occupation as "clerk", and for secret communication purposes the rank of an operative was indicated by a three digit number preceded by another number designating the country in which one was serving. The (then)

number for Czechoslovakia was 38, my ranking was fourth, thus my number was 38(004)1 which put me three steps above James Bond 007! Although we were issued with Walther pistols, I don't know of any wireless operator who was licenced to kill! My father took over as station chief when he recuperated, and stayed in Prague until ill-health forced him to resign in July 1946.

While serving in Prague, I witnessed the public hanging of Hans Frank, the former Gauleiter of Prague; represented Great Britain (as a Catholic) at a Catholic Congress (although at that time I had been confirmed in the Church of England and was in fact an agnostic!); saw the purge of collaborators; the return of concentration camp inmates; made a covert crossing of the Polish border to meet an agent, and almost became addicted to the famous Czech Cherry Brandy!

The service was not without its casualties - Major S Payne Best and Captain R Henry Stevens were both kidnapped at Venlo, Holland, by an SS officer Alfred Naujocks and his men on Himmler's orders, taken to Berlin and interrogated then incarcerated in a concentration camp; Captain Murray was shot in the stomach, died, and is buried in Whaddon cemetery; Major Saunders disappeared on his way to Paris

in 1944, and Colonel Gibson committed suicide. An estimated half the SOE operatives never survived the war.

On May 28th 1946, I received a telegram from Major CJ Crocker of the Foreign Office thanking me for my wartime service and offering me the position of Operator - Grade B (salary £260 pa. Yes, you read it correctly, £5 pw!) in the peacetime re-organisation of the Special Intelligence Service (re-named The Diplomatic Wireless Service). I accepted, and served in that capacity until I resigned in June 1947, to emigrate to Australia with my family. My days with the intelligence service were over - I was not yet 20 years of age!

Dear Edwards,

You will, I am sure, appreciate that it is necessary at the earliest possible time to put the organisation on a peacetime and potentially permanent basis ... we have greatly to reduce our staff in peace-time to what it was in war ... in your case it is found possible to offer you a position on re-grading of:- Operator - Grade B, with a salary of £260 per annum taxable gross. Overseas allowance of £100 p.a. will be payable to personnel so serving. Extra cost of living allowance applicable to any station will likewise be payable on the same rate as to ordinary F.O. staff.

I am instructed by the Director of the Department to take this opportunity on his behalf of thanking you most sincerely for the able and efficient work you have done for the Department during the war.

Yours truly,
Chas, J. Crocker.

From Major CJ Crocker, c/o Room 17, Foreign Office, London, S.W.1.

Extracts from confidential telegram No T/4009 dated May 28, 1946, addressed to me. While the original is faded but still legible, it was not deemed suitable for reproduction.

Note from the Editor

Although Harry's article has little to do with our normal fields of enquiry, I was intrigued to learn a little about his past history and felt that his story would be of interest to other readers, so I decided to include it.

Readers who are familiar with the banter which is often exchanged between us in these pages will note that I forbore to rise to any of the little baits Harry left for me in his manuscript and I am sure they will be as amazed as I am at my restraint.

Harry did include a couple of other pieces of documentary evidence to support his story, but as they were photocopies of very old documents, I judged that

they would not benefit from yet another copying during the printing of the magazine, as they would almost certainly appear as featureless grey smudges.

The most important piece of information contained within them, apart from confirming his status as 004, was that the gentleman we all know and love as Harry Edwards actually luxuriates in the name **Henry Cecil** Edwards. Readers who wish to correspond directly with Harry, should bear this in mind.

Barry Williams

REPORT

A Day with the Creationists

Andrew Parle

Creationist Meeting, June 2
Christian City Church, Brookvale NSW

There is an old Jewish joke that runs something like this. A poor old Jew around the turn of the century is sitting in his village in Russia reading one of the many anti-Semitic hate sheets that circulated around that part of the world: saying “The Jews are doing *this*, and the Jews are plotting *that*, and so on. A friend walks past and is horrified: “How can you bear to read such rubbish as that?” The first Jew calmly turns the page and replies: “I like to read about how powerful I am!”.

It is in somewhat the same frame of mind that I attended a Creationist film and lecture meeting where Carl Wieland was the featured speaker. Carl is of course well known to Skeptics as one of the leading lights in the Creation Science Foundation, and we have had a number of discussions with him in these pages and elsewhere. This meeting was attractive because it offered the opportunity for questions, which as Skeptics have discovered, is rare in Creationist gatherings. This is what transpired, as seen through Skeptical eyes.

Proceedings started off with film, *The Genesis Solution*, featuring Ken Ham. I missed the opening, but on the advice of the person taking tickets, I hadn't missed much. Ken was busy explaining -preaching would be a more accurate term - that evolution was a religion. The fact that evolution does not require a supernatural element seems to have escaped him. From then on, evolution was blamed for abortion, racism, homosexuality, slavery, euthanasia, lawlessness, the Holocaust, and the philosophy that “everyone has a right to their own opinion”. After all, if you say that the Bible has to be the basis of all of your thinking, that does not leave much space for your own thoughts. The inconvenient fact that all these ‘problems’ existed long before Darwin was brushed aside - every people who did something that Ham disapproved of was an evolutionist. For example, the ancient Greeks (to whom homosexuality was an accepted part of normal behaviour) clearly believed in evolution on the basis of Aristotle's speculations that different animals might be related.

The main thrust of this film was the syllogism: Evolution means that there is no Creator (it doesn't); which means that there is no absolute authority (in Ham's words - we are not ‘owned’); which means that there is no restraint on us doing what we want and thinking what we please. The film ended with a plug for a number of books and videos for putting the Creationist message.

Carl Wieland's first talk was titled “Exciting evidences for Creation and against Evolution” but actually it was short on both. After reiterating the claim that “thousands of scientists” support Creation: in evidence, he noted there were a full thousand in South Korea alone (I can believe THAT), he mentioned a few specific cases: a Russell Humphreys who (if I recall correctly) came up with the Creationist model of the geomagnetic field: a concoction with no physical basis whatsoever and clearly designed to satisfy the requirements of the short earth time scale; a thermo-nuclear physicist whose name I did not record (now THAT's a discipline that's useful in researching evolution); our old friend Wilder-Smith with nine - or is it eleven - “earned doctorates”; and Kurt Wise who, when I spoke to him last, was both a scientist and a creationist, he just hadn't got the scientific evidence to justify that belief. That illustrates the problem with testimonial references from scientists: one can be a scientist and a creationist (although the overlap is much smaller than claimed) but that has no great weight for other people unless you believe in creation for scientific reasons.

A brief explanation of genetics followed to introduce the first strike against evolution: industrial melanism and pesticide resistance in insects. Carl maintains - correctly in my opinion - that these have been oversold as if they were direct evidence of [macro] evolution while they are rather neat illustrations of natural selection (the mechanism of micro-evolution). The sub-text (not said, but implied) was that *all* evolutionists made the claim that this was macro-evolution which is quite false - I could just as easily say that *all* creationists believe that Alan Roberts brought back photographs of Noah's Ark just because some claimed he did.

A later topic of discussion was selective breeding which had the theme that artificial selection - the example he used was dogs - decrease the gene pool (“lose information”). This approach is interesting because Darwin's *Origin of Species* opens with a discussion of artificial selection among pigeons (Darwin of course knew nothing of genetics). It is also an oversimplification because artificial selection, and by extension natural selection, also preserves favourable mutations which by definition increase the gene pool. Carl's next example, that of horses, zebra and asses (as an example of variation within a kind) was perhaps a bit unfortunate for him as the gene pool of this group is definitely greater than that of a pair of individuals - these are separate species which even have different numbers of chromosomes and hence could not have been derived from a common ancestor without a

macro-evolutionary event - an "increase" in information.

When later questioned about the severe limitation of the gene pool due to the small number of individuals aboard the Ark, Carl departed from orthodox genetics by allowing the alleles (the variants of a gene which lead to different expression of characteristics, only two of which may be held by a single individual for ordinary genes) to be subdivided into the base pairs of DNA, which from an information theory viewpoint would permit two individuals to hold all possible variants of all possible genes. It seems to me that this basically says that genes as individual units of heredity do not exist, but perhaps someone with more training in genetics should take this up.

To Wieland, every mutation is a defect. The examples he chose to give of mutations are the ones we know as genetic diseases, such as sickle-cell anaemia. Now of course most mutations are either neutral or lead to defects in the individual, but not all. Here Carl failed to mention a point which is rather harmful to his case, in that sickle-cell anaemia as a reinforced recessive is lethal, but as a single gene is protective against malaria - which is why it is relatively common in populations such as Americans of African descent. Here is a gene which clearly occurred as a mutation and was preserved because of the overall benefit it gave to members of a population.

Towards the end of this talk, Carl Wieland gave a graphic illustration concerning the origin of life. Now I always thought that this topic was a bit of a straw man, in that Creationists invariably bind it up with evolution, which concerns how species originate with other, different species. Although there is plenty of evidence about species change, there is little about life's origin apart from the obvious fact that life exists today. Carl held up a glass of green substance, joking that it was a blended tree frog, and challenged the audience to believe that any living organism could spontaneously assemble itself from the biological parts therein. Very effective in that it appealed to the common sense and experience of the audience, but if one were to consider an ocean full of protoorganic junk and a time scale of hundreds of millions of years, our limited experience does not really count for much.

In all, there was no evidence given in favour of Creation and little against Evolution. This talk, like all the talks, ended with a sales pitch about the books and magazines on sale at the back of the hall.

The second film, *The World that Perished*, looked at the mechanics of the Flood. First it looked at flood legends from around the world, arguing that they must have had a common basis (some of them do, as we know -the Genesis story is based on an older Babylonian myth). It then purported to look into the physics on whether it is physically possible. The way it approached this crucial topic is to show a white coated scientist opening a Bible. The Ark was hailed as an exceptionally stable ship because of its dimensions - ignoring the obvious point that the structural strength of a wooden ship of that size would be quite low. Estimating 50,000 animals with the average size of a sheep (ignoring fossil species apart from dinosaurs), and going by the packing

density possible in a modern railway sheep transport, the film claimed it was possible. As they had already stated that there was only 100,000 square feet of deck space, I reckon they skipped a few decimal points in their figuring. As for the food and manure disposal problem, they resorted to divine intervention, putting the animals into a state of hibernation (I do feel that this critical point would have been mentioned in the Bible, given the amount of trivial detail given in other cases).

Turning to the Flood itself, there were no new ideas except that the "vapour canopy" where the waters above the firmament were stored, now becomes a shield against harmful cosmic rays, explaining why the human life spans were so much greater before the flood. All coal and other fossil fuels were formed quickly from then-living vegetation. Coastlines and fossil lakes show definite edges ("water lines") where the water level remained for some time - this is taken as evidence in favour of them being filled with flood water rather than the reverse. The ocean basins were smaller before the Flood, so that is where the water went to (this rather misses the point, as the water could not possibly evaporate, so all the continents and islands must have been constructed *after* the Flood.

The film ended with a stern warning about how the world is predicted to end in fire, with the image of a burning city and the door of the Ark slowly closing over the words "Don't let this happen to you!"

Carl Wieland's second contribution was a talk entitled "Fossils, the Flood and the Age of the World". This involved an attack on "theistic evolution" with the claim that making life pass through three billion years of evolution would be cruel of God. This theological argument ignores the fact that extinction is not cruel as it affects species, not individuals; and the further fact that "cruelty" is quite common in both nature and the Old Testament so that divine cruelty (if one chooses to regard it so) is not without precedent. Then Carl got down to the hard science which (as far as I could tell) was mostly factual but largely misinterpreted.

Firstly there were some examples of catastrophic creation of rocks and geographical features, such as layers of volcanic dust laid down by the Mount St Helen eruption. The intention seemed to be to refute the anti-catastrophic geology from the early part of this century: if so, it caricatured contemporary geology where catastrophe and gradualism are both recognised. As the audience was mostly lay (from a scientific point of view) they may have taken it to mean that all rocks can be created in a very short time (which is false).

Next came a discussion of fossil preservation. Carl made the point both that fossilisation is rare and that it frequently requires unusual circumstances: an animal to be buried before it can be eaten or decay, for example. It was good to hear a Creationist acknowledge the rarity of fossilisation, as this is more often used as an argument in favour of evolution, but the point Carl was making was that the Flood could provide the conditions of sudden burial to permit fossils to be formed.

I wondered, if this were the case, why there weren't a lot

more fossils than we currently find. After all, the number of fossilised individual animals is only a tiny fraction of the number alive today or at any time in even a short earth history - so if the entire population perished in a Flood providing good conditions for fossilisation, there should be a lot more fossils!

When the discussion turned to coal, the rarity of fossilisation turned to a near certainty. Carl maintained that all coal was formed during the Flood, and that there were very large areas (such as much of Australia) where coal occurs to a remarkable thickness. It is clear that almost all plants alive at any one time would be needed to form so much coal - so why is there not a corresponding abundance of animal fossils?

There was a brief discussion of intermediate forms which was notable only for the speed in which Archaeopteryx (avian but with some reptilian characteristics) and the platypus (mammalian but with some reptilian characteristics) were dismissed. As far as I recall, the lungfish was not mentioned. Carl's discussion of fossils finished with a flourish of quotes from the (revised) Quote Book.

Up to this point it was a fairly standard Creationist attack upon evolution, concentrating on what are seen as its weak points. This is fine if all one wants to do sway a lay audience, but was disappointing in that I had hoped that alternative explanations might be raised to answer some of evolution's strong points, such as the questions: Why is there such a thing as a "mammal" if these animals are not in some way related? Why do many species (such as man) have organs which are useless but which serve some function in similar species? If every species or group of species is individually created, why do we see hierarchical relationships between them? From the Creationists, there is only silence.

Next was a list of physical phenomena which (it was claimed) indicated that the Earth or the Universe could not be billions of years old. Among the candidates: spiral galaxy wind-up time, the survival of comets, the amount of sea salt, the depth of silt on the sea floor, and the concentration of atmospheric Helium, which supposedly give upper limits ranging from 10000 years (for comets) to 100 million years (for spiral galaxies). The spiral galaxy argument is based on a number of unlikely assumptions about galactic dynamics, which has recently been revolutionised by the probably discovery of massive black holes in a galactic nucleus. The comet argument is based on the idea that all comets are relics of the origin of the solar system (probably true); have had similar orbits since they formed (probably false) and have had fairly short orbital periods for that time (certainly false). The amount of salt in the sea sounded like an argument I had heard previously based on a misreading of data about solute residence times, and the Helium argument has been answered long ago.

Things got interesting when Carl talked of a common argument against Creation in the recent past: the light from

distant stars. In the past, Creationists have put forward a couple of explanations: that light was created coming from distant stars at the same time the stars themselves were created and that the speed of light was much higher in the past. Carl dismissed the first on theological grounds and the second on physical, although I have no doubt we will be hearing them both from other quarters for some time. The latest theory relies on General Relativity using the time dilation in a gravitational field. In brief, time passed more slowly on Earth due to gravity. Now this is quite correct, but the effect is far too small to get the factor of millions to one between "Earth Time" and "Universal Time" that would be required. I cannot feel that this theory has legs, both because the numbers just don't add up, but mostly because of the look on the audience's faces as they listened to Carl trying to explain what happens to someone as they fall into a black hole.

One quote from this section stuck in my mind: "Cosmologists have a religious aversion to edges." I guess this is true, because it is difficult to imagine what might be on the other side of the edge of the universe.

There was a useful question time after this talk, where I asked why there were no human fossils mixed up in the same rock layers as dinosaurs. Carl gave a very reasonable reply: he said he didn't know, but hypothesised that since God intended to destroy mankind, He may have deliberately removed all traces of his existence.

The third film illustrated an increasing trend in Creationist debate: they are pushing dinosaurs as hard as they can. The Great Dinosaur Mystery looked at what happened to dinosaurs after the Flood, and hypothesised that legends of dragons actually referred to dinosaur survivors. Weak on logical argument, but the kids will lap it up.

Carl Wieland's last talk was entitled, "The Most Asked Questions". Here we found out that Cain's wife was in fact his sister, but there was (a) no risk of birth defects because Adam and Eve had no bad recessive genes, and (b) there was no problem with incest because there was no law against incest before Moses. This was a great relief. We also found out that as all races started out even from the time of the Tower of Babel, then the "backwards" races (such as the Australian Aborigines) were those which had rejected God. I wondered how the Chinese fitted into this scheme. There was a further question time after this talk, but as the contents were so subjective, it was difficult to find common ground for a sensible discussion.

To conclude: this meeting was aimed at the evangelical Church with the intention of making Christians reject theistic evolution either on theological grounds or what passes for science. To help them make his decision, all evils in the world are placed at the feet of evolution. It seems to me that their argument is really against atheism, and the attempt to equate evolution and atheism is merely a subterfuge to exclude the middle ground of theistic evolution. Carl Wieland and the attendees I talked to were (mostly) polite and reasonable even if they regretted that I was so misguided. ■

REVIEW

Creationism: The Hindu View

Colin Groves

Forbidden Archeology: the Hidden History of the Human Race

Michael A. Cremo & Richard L. Thompson

Govardhan Hull Publishing, San Diego, California. ISBN 0-9635309-8-4.

When a big square package, weighing over 3.5kg, arrived in my pigeon-hole, a number of thoughts flitted across my mind. Which student hates me enough to send me a letter bomb? Will the postman sue me because of his hernia? After the package, when unwrapped, proved to contain a 914 page book, I felt like the Prince Regent on being presented by Edward Gibbon with a copy of his "Decline and Fall of the Roman Empire": "Another great damn thick square book! Always scribble, scribble, scribble, eh, Mr Gibbon?". And then that final, heart rending, cry, "Why me?".

There is a letter from the senior author, Michael Cremo, accompanying the book. "Because your work, or that of your colleagues, is discussed in my new book *Forbidden Archeology*, I am sending you an advance copy." Can this be conspiracy theory as applied to archaeology by someone who feels that The Truth has been suppressed by The Establishment? It can. The letterhead is "Bhaktivedanta Institute, San Diego". Can this be a representative of that other fundamentalism, the Hindu variety? It can.

Remind ourselves what fundamentalist Hindus believe. Like fundamentalist Christians and Jews, they dismiss evolution. Unlike the latter, who believe the world has existed only six to ten thousand years, fundamentalist Hindus believe it has been going for billions and billions of years - far more than geology allows, in fact. And human beings, and indeed all living creatures, have been here all along. But in the event, it is going to make little difference; an apologia will consist of a recital of long-forgotten (long-suppressed, in their view) "evidence" of humans coeval with trilobites and dinosaurs, and arguments that supposed ape/human intermediates really aren't that at all.

But this time we get nearly a thousand pages! Gish, Bowden and Lubenow, the Christian creationists, can't raise even half of this between them. The difference is that Cremo and Thompson have read much, much more of the original literature than the other creationists, and their survey is correspondingly more complete. Yet I can't really say that their understanding is much greater, for all that; their tone of argument is as perverse, they are just as biased.

The fossil and archaeological evidence for human and

cultural evolution is not all of consistently high quality. In the nineteenth century, human remains and artefacts were usually found by accident and by amateurs; they would be dug up, removed from context, and presented with a flourish to the nearest "expert". Controlled excavation was not a widely practised art; photography of a find in situ was an unusual occurrence. The finds' stratigraphy was often vague in the extreme; those re-examining their significance in later times had to rely on the fading memories of untrained workmen who had been enlisted by the finder.

This state of affairs improved as archaeology and palaeontology developed, and contextual information came to be recognised as crucial. Today, accidental discoveries are rarities; usually specimens turn up because someone has an idea where to look, given the prevailing geology and landscape, and an excavation is mounted with all kinds of specialists - geomorphologists, geochemists, taphonomists, above all photographers - riding along to ensure that everything about the site and its contents is recorded.

Cremo and Thompson seem not to understand this; they seem to want to accord equal value to all finds. One of many, many "out-of-context" human fossils which they discuss is the Foxhall jaw, a specimen of modern *Homo sapiens* discovered in 1855 and commonly ascribed at the time to the Late Pliocene, when (as we now believe) the human lineage was represented by just a bunch of near-apes called the australopithecines. The jaw was found by workmen, one of whom sold it to Dr Collyer, a passing American physician, for the price of a glass of beer, and Collyer showed it to the luminaries of the day - Owen, Prestwich, Huxley, Busk - who expressed a variety of opinions, that it could or could not have come from the site and level claimed for it, and so that it could or could not be an example of "Pliocene Man". The jaw not long afterwards disappeared.

The authors quote the palaeoanthropologists Boule and Vallois in 1957: "It requires a total lack of critical sense to pay any heed to such a piece of evidence as this", and I can only agree; but, oddly, Cremo and Thompson disagree. Their opinion has nothing to do with the obvious fact that the whole case for the specimen's Pliocene origin was based on hearsay and supposition, and because the fossil has since disappeared, but because the stratigraphic provenances of other, nowadays widely accepted, fossils - "Java Man" and the Heidelberg jaw - were likewise based on flimsy evidence, and the original "Peking Man" fossils have likewise disappeared!

One has only to turn to their accounts of these fossils, and

to read between the lines, to see why these other fossils are today taken seriously whereas Foxhall is not: other “Java Man” and Heidelberg-like fossils are known, whose stratigraphy has been exhaustively studied; excellent photographs, radiographs and casts survive of the lost “Peking Man” fossils, and others exactly like them have turned up since. But the same sort of non-evidence (Galley Hill, Clichy, Castenedolo, Calaveras, all *Homo sapiens* fossils briefly famous in their day because their finders thought they were Miocene, Pliocene or whatever) is taken seriously by the authors, who then completely miss the point when they imply, or claim boldly, that the evidence for the australopithecines, habilines and so on is also somehow flimsy.

There is an Appendix on the dating of fossils, mainly radiocarbon; Potassium-Argon dating is given the hatchet job in the main text (section 11.6.5). Devastating “exposure” of the alleged deficiencies of radiometric dating is obligatory in all creationist texts on fossils, and this one is no different. There they all are: the 160 million to 2.96 billion year dates for Hawaiian lava flows known to be less than 200 years old; the supposed “cover-up” of discrepant dates; the arguments over the correct date of the KBS Tuff at Koobi Fora, whether it was laid down 2.6, 2.4 or 1.88 million years ago. It is as if Cremo and Thompson think that an invention, as soon as it is made, either works or it doesn't; of course, the understanding of new methodologies - potassium-argon dating like any other - improves as its practitioners make mistakes (and, alas, are often embarrassed enough about their mistakes to keep quiet about them) and learn from them.

Potassium-argon dating and its now more generally used successor, the Argon/Argon method, are by now rather well understood. It is understood, for example, that a mineral erupted from a volcano will release its store of radiogenic argon, resetting the “clock”, only if it reaches a high enough temperature, and that the lava from deep-sea eruptions is chilled and does not usually reach this temperature; so that if you measure argon in an undersea lava flow (say, for the sake of argument, in Hawaii) you will be measuring what has been stored up over millions and millions of years, not just what has accumulated since the eruption.

It is understood, too, that tuffs are volcanic products brought down by water and deposited along-side other, much older, sediments; so that if you simply pick up some grains from a tuff (say, for the sake of argument, at Koobi Fora) you are very likely to get some very ancient ones along with your recent volcanic ejecta, and unless you clean the sample very carefully you will get anomalously high readings because of this mixture. This all seems very obvious nowadays, but the earlier practitioners of the method had to learn it the hard way. And in the main it is not suppressed: their errors are in the literature for all to see, and for creationists to point out with a delighted “see, it doesn't work!”.

Now, palaeoanthropology is a speciality of mine, but archaeology is not, so I showed the book to a couple of colleagues whose speciality it is. Dr Andrée Rosenfeld was

not highly delighted, but offered some comments on the book's long, long, discussion of Eoliths. These are (no, were) supposed stone tools from extremely ancient deposits, believed in by many archaeologists in earlier generations but now universally discounted.

“The problem”, Andrée explained, “lies in their selective emphasis and choice of language; have they not heard of semiotics? For example, on p 106 they quote an early objector to eoliths, Worthington Smith in 1892, and totally misunderstand its significance; eoliths can be extracted from any gravel from any period, whether with or without other artefacts, and with any range of patina - eoliths in fact only occur, as far as I am aware, in gravel or similar deposits.” That is to say, in any deposit with lots of small stones in it, you are going to find some stones that by chance resemble crude artefacts! “They have not examined eoliths, but present a value laden discussion of the literature. The question is not ‘could such fractures arise from hominid action’ but could such fractures (or other marks) arise naturally - and if so, they cannot be taken as evidence for hominid presence.”

Eoliths are commonly featured in creationist texts - after all, here are Hindu not Judaeo-Christian creationists - but there are other bits and pieces in the book which I have met with before. On p 811 we have the famous “Meister print”, a supposedly shoe-like print, associated with trilobite fossils, in Cambrian deposits in Utah. The junior author, Thompson, examined the print in 1984 and (p 812) saw “no obvious reason why it could not be accepted as genuine” despite the careful arguments to the contrary by a geologist, Stokes, quoted in two previous paragraphs.

Where I had met the Meister print before was in the first edition of a (Christian) creationist pamphlet, *Bone of Contention*, by Sylvia Baker, MSc, and where I failed to meet it again was in the second edition of said pamphlet; presumably Ms Baker learned of Stokes's analysis and quietly dropped it.

Another bit and piece and which I have met with before is a “carved shell from the Red Crag, England (Late Pliocene)”, a period long before art was supposed to have existed, of course. This is a shell with what looks like two little round eyes, a simple triangular nose and a slit of a mouth carved into it; it resembles a Halloween pumpkin. Where I had met this one before was in an issue of *Creation Ex Nihilo* some four or five years ago, and I must say that when I saw it there I laughed out loud. Here it is again, just as chuckleworthy, on pp 71-72. See above, under Eoliths.

Andrée Rosenfeld again: “What is curious is that an essentially religious organisation feels the need to justify themselves by recourse to science - but their discourse is scientific, not scientific.” In this, they are no different from any other creationists. Try to think ourselves into the mindset of a religious fundamentalist: “I believe in my sacred texts. I am aware that science does not support their veracity. My

REVIEW

A Psychiatrist's Reflections

Dick Champion

The Anatomy of Mirages: A Psychiatrist Reflects on Life and the Mind

John Ellard, 1994

UNSW Press Sydney. P'back 292 pp \$23.95

John Ellard is an eminent Australian psychiatrist and hospital administrator who has been a corrective services commissioner, chairman of the Law Foundation of NSW and a university lecturer, to cite just a few of his many roles recognised by the award of the Order of Australia. He is also distinguished by his greater than usual formal study of academic psychology and a subscribership to the Skeptic.

His healthy scepticism shows in the essays or addresses collected together in *The Anatomy of Mirages*, which have appeared in *Modern Medicine of Australia* (of which he has been editor for some years) and the *Australian and New Zealand Journal of Psychiatry* over the period 1980-1993, now expanded with a general introduction followed by a brief initial comment on each article.

The most relevant pieces for Skeptics in the wide range of topics probably are "Community Mental Health as a Myth", "Life after Death", "Strong Beliefs and Delusions" and "The Recognition and Management of Werewolves".

Possibly enlivened by being one side of a debate, the article on community mental health is a gem in its denial of the reality of the concept. One on "Psychotherapy" (an amateur's guide to the 57 varieties), on the other hand, plays down the role of psychoanalysis to the point of suggesting a real use for the doctrine.

In "Burnout" (1987) the concept is cut down to size all right but by 1994 it seems to have died out anyway, or at least reverted to one of its many earlier forms. In "Stress", however, the word is said to represent a nest of problems so far (1987) defying the achievements of scientific medicine whereas in 1994 it is likely to face strong scepticism. The collection has its sprinkling of humour, somewhat tongue in cheek as in "Psychotherapy" or head on in "...Werewolves".

A very proper feature of the author's scepticism is his determination to reject circular argument. For example, in "New White Elephants for Old Sacred Cows", the elephants and the cows are the psychiatric diagnoses that are continually treated as causes of problem behaviour. He makes the same vital point in "The Psychopathology of Sin" by arguing that

the disorder is the unacceptable behaviour and not the cause of it; for example, anti-social personality disorder is fighting, lying, selling drugs, and so on, not the cause of these behaviours.

But the pervasiveness of circularity in our thinking traps even the author at times; in "Addiction: what it is and what to do about it" he claims the likelihood that "... the conjunction of a dedicated healer and an addict motivated to change his ways will produce success, whatever the nature of the therapy." (p 18). (The circular use of "motive" is the bane of the straight psychologist's life). Worse still, he frequently refers to "neurosis" and "neurotic condition" as causes rather than descriptions. ■

...Hindu Creationism from p 44

belief is not wrong - that is axiomatic - therefore science must be. I must look into this science business, to find out where it went wrong."

The fundamentalist convinces him/her/itself as supposed holes in the scientific fabric turn up, and wow! this can be used to convince others too! It's a kind of top-down learning experience; what is missing is what students get as they learn their science bottom-up: context. That, really, is why it is so difficult to actually open a dialogue with the creationist; why it is that scientists debating with creationists are effective mainly when they are pointing out their opponents' ignorance, stupidity or outright lies. Their opponent - let alone the audience - simply has no conception of context.

A book like this, simply because it is superficially scholarly and not outright trash like all the Christian creationist works I have read, might indeed make a useful deconstructionist exercise for an archaeology or palaeoanthropology class. So it's not without value. You could do worse, too, than place it in front of a Gishite with the admonition "Look here: these guys show that human physical and cultural evolution doesn't work. Therefore it follows that the Hindu scriptures are true, doesn't it?" ■

REPORT

Two Shaky Experiments

Sir Jim R Wallaby

Rupert Sheldrake, the British botanist, who some years ago proposed the theory of 'morphic resonance' (which to my untutored eye appears to be the notion that living species create a 'morphic field' which resonates with others of that species, allowing some sort of instinctive 'knowledge' to be passed around without the intervention of language in its many forms) has written a book *Seven Experiments That Could Change the World*.

In pursuit of his theories, Sheldrake, who appears to be somewhat miffed that other scientists have not run into the streets shouting "Eureka", and seeking to prove his theory, also wrote an article "Bridging Science and Religion" which appeared in *The Sydney Morning Herald* of May 31, 1994. In this article Sheldrake promotes the view that scientists will not test his ideas because positive results would provide proof of psychic powers, which he believes is a taboo subject for the majority of scientists. He complains that biologists and psychologists, and for that matter theologians, have neglected the field and have left it to the tender mercies of "the pariahs of institutional science, the parapsychologists. And even these worthies have ignored several seemingly major types of psychic phenomena including the uncanny powers of animals." Sheldrake then goes on to enumerate a number of experiments which "can be explored by inexpensive experiments open to almost anyone".

Well, no-one can accuse the Wallaby's of being daunted by taboos, the word 'inexpensive' appeals to my natural thriftiness and I am quite convinced that I am at least as psychic as anyone, so, in the interests of scientific enquiry, I decided to put some of the good Dr's assertions to the test.

The first suggestion concerned the popularly supposed fact

that when people sense that they are being stared at, they turn around and find that it is true. A simple experiment and one that fortune threw into my path almost immediately. Certain circumstances, during the week in which Dr Sheldrake's article appeared, forced me to utilise the services of the Sydney suburban rail system for several consecutive days.

What better way of testing this theory? On each journey, I fixed my stare (which certain of my acquaintances have likened to that of the fabulous basilisk) on the neck of a randomly selected passenger sitting in front of me. On a

number of occasions, so fixed was my gaze that I would almost swear that wisps of smoke could be detected rising from the collars of my victims. Passengers sitting beside me, who could see my burning eyes and intense concentration, were noticed nervously glancing at the signs stating that "Plain Clothes Police Travel on this Train". But not a single sign of nervous apprehension, not a twitch was vouchsafed by any of those who were subject of my stare.

A few weeks later, when I was once more reduced to the rigours of public transport I again tested the theory, with results totally consistent with those of my



A young North Shore citizen oblivious to psychic energies

first attempts.

Undeterred, I cast my net wider and found myself exercising my psychic powers in all manner of public places. No shopping centre, hotel or place of public entertainment was safe from the distilled Wallaby glare and yet not one jot or tittle of response did I receive. It would appear that this was one experiment that would have a nil result.

My second essay into the world of psychic research concerned the sensitivity of dogs. Sheldrake nominates the widely held view that dogs are somehow attuned to the

wavelengths of their humans and are thereby able to sense the imminent arrival home of a family member. This is an experiment I have been observing, albeit unconsciously, for years.

Wallaby Manor is home to two noble beasts of the species *Canis familiaris*. One, Gypsy is a miniature fox terrier bitch of sublime temperament, and the other, Chewie (so named for his remarkable resemblance to the character in the *Star Wars* cinematographic epics) is a medium sized dog of indeterminate parentage. Both are highly intelligent and each is approximately nine years old.

Normal behaviour of these two on the arrival home of a member of the family at the regular time gives one an appreciation of how a putative deity must feel when his faithful flock indulges in worship. Both are invariably at the gate and both give voice to loud Hosannas of praise, frisking and frolicking like a televangelist who smells money. All perfectly normal and explicable dog-like behaviour in my experience.

But Sheldrake posits something else. He avers that this is not merely a matter of routine, nor of the known extreme sensitivity of the scent and hearing faculties of the dog, picking up the scent of its human or the familiar sound of the car.

In his experiment, one human member of the family is to come home at a time and by a means that is not usual and other family members are to notice that the dog/s will act welcomingly at some time before his arrival.

Such is the nature of my quotidian round that I usually arrive home at the same time each day, driving the same limousine as I have for several years. However, on irregular occasions I have come home during the day, often driving another vehicle, which I park in the street. On these occasions it is not unusual for me to manage to enter the Manor, change my shirt, polish my shoes and put on the kettle before the Hounds of the Wallaby's emerge from the bolthole where they have been skulking, blinking and yawning, before launching themselves on me in embarrassed mock *bonhomie*. None of the other family members who are at home when I arrive unexpectedly have ever noticed any signs of preliminary warnings of impending arrival emanating from

the dogs on these occasions.

On the other hand, even if I only go out to buy milk, my return after a five minutes absence is greeted with a display of enthusiasm that would normally be expected to accompany a return from a Polar expedition. The two dogs can recognise an absence, they can certainly recognise the sound of my car, but their understanding of the passage of time seems to equate with that of the average creation 'scientist'.

The final experiment mentioned in the article concerned the ability of pigeons to find their way home, a field in which my expertise is marginal and I did not consider it appropriate for me to test it. What he seems to be saying is "pigeons can find their way home; we don't know how they do it; ergo

psychic powers", a statement on a par for a Nobel award in *non sequiturdom* with "life exists; we don't know how it started; ergo God created the whole shooting match on October 23, 4004 BC".

I realise that, just as one swallow does not a summer make, so one experiment does not prove (or disprove) a theory, but Sheldrake did offer these experiments as being available to 'almost anyone', and no-one could be more of an anyone than the scion of the ancient house of Wallaby.



Chewie and Gypsy, two decidedly non-psychic dogs

I entered these experiments with a completely open mind and I really did try, but the evidence is strongly suggestive that either the commuters on the North Shore Line and the Wallaby dogs are a bunch of atypically insensitive, non-psychic clods or I am completely incapable of projecting EUTS*. Or perhaps another answer suggests itself. Could it be an example of the well attested 'shyness effect', which is known to inhibit psychic abilities and is thought to be caused by the presence of a sceptic.

Whichever of these alternatives is the case, I would like to suggest to Dr Sheldrake that if it was that easy to demonstrate psychic powers, their existence would have been non-controversial for centuries, if not millennia.

*Energies unknown to science. Evidence which is required to give effect to phenomena for which there is no other evidence.

A Mighty Oak from a Tiny Acorn Grew

A Brief History of the Australian Skeptics

Harry Edwards

I have often been asked the same question, “How did the Australian Skeptics start?” and as the answer may be of interest to our subscribers I have put together this brief history.

In 1976, the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) was formed in the United States. Its official bi-annual journal, *The Zetetic* (title changed to the *Skeptical Inquirer* and made a quarterly in 1978) came to the notice of Australians Dick Smith, Philip Adams and Mark Plummer, who became subscribers.

In a letter to the *Skeptical Inquirer*, (Winter 1979-80. 4:2 p 107) Plummer opined that a branch was badly needed in Australia and asked for interested parties in this country to contact him.

Dick Smith read the letter, contacted Mark, and offered to sponsor a visit to Australia by James Randi, a professional magician and principal investigator for CSICOP. Randi had previously worked on an exposé of psychic surgery with Richard Carleton who at that time was with the BBC in London.

In October 1980, James Randi came to Australia, and supported by an offer from Dick Smith, Philip Adams and Richard Carleton of a \$50,000 prize for anyone who could prove psychic phenomena, tested over one hundred people who made such claims - water diviners, spoon benders, ESP, psychic photography and metal detection. All failed to prove their claims under controlled test conditions.

Following the meeting, Mark Plummer called for volunteers to start the Australian Skeptics. Among the first to join was James Gerrard who became and remained National Secretary for the first five years, Mark assuming the mantle of National President.

Dick Smith and Phillip Adams became Patrons of Australian Skeptics and offered \$10,000 each as an award to anyone who could demonstrate a paranormal ability under controlled conditions. In 1987, Dr Paul Wild, then head of the CSIRO, became a third Patron. In 1991, Ron Evans, Secretary of the South Australian branch, added an extra \$10,000 to the amount to be offered to successful paranormalists. This Skeptics Challenge of \$30,000 remains on offer to anyone who can pass the tests.

The first issue of *the Skeptic* came off the press as a four page tabloid format newsletter in January 1981, with Mark Plummer as editor, assisted by James Gerrard. In that year, three issues were produced and in the next year, the magazine increased in size to sixteen pages and became a quarterly.

Editorship passed to Janet de Silva in 1983, followed by Anne Tuohy in 1985 and moved to Sydney under the pen of Tim Mendham in November 1986. At this time, Mark Plummer went to the USA to become CSICOP's Executive Director, and the New South Wales branch committee became the National Committee with Barry Williams at the helm.

By late 1987, Tim, who was wearing five hats - editor, secretary, archivist, treasurer and shouldering the responsibility for back issues, wilted under the strain. Harry Edwards took on co-editing, the secretariat and responsibility for back issues. Despite the decreased number of his jobs the ever increasing size of *the Skeptic* (then averaging 40 pages) and increasing pressure from his employers proved too much and early in 1990, Tim was forced to throw in the towel.

Barry Williams took on the role of Editor, purely as a temporary measure, but found that he liked the job so much that it would now require the application of explosives to remove him. Harry Edwards has remained as his side-kick in the job and has become the chief investigator of strange beliefs. Since 1990, Dick Champion has held the purse strings, and Ian Bryce has been responsible for testing challengers for the \$30,000 Skeptics Challenge.

In 1993, we produced *In the Beginning*, a compilation of all the major articles from the first five years of the *Skeptic*. In this way, we make all of our work available to our subscribers

In its fourteen years of existence, Australian Skeptics has grown from a handful of enthusiasts into an organisation of more than 1500 subscribers, whose numbers include representatives of almost every profession and occupation.

We have branches in every state, award the Bent Spoon annually to the “perpetrator of the most preposterous piece of paranormal or pseudo-scientific piffle”, have tested many claimants for our Challenge (none have yet been successful), and have spread the concept of scepticism via our journal and through the media at large. In this, we have had a measure of success, in that those who wish to promote magical thinking are on notice that their claims will not go unchallenged

Our aim has always been to promote critical thinking and to encourage people to look at the world as it is and not as it might appear in our fantasies. The evidence suggests we have not done a bad job, but, as someone once almost said “The price of intellectual freedom is eternal vigilance”. With your support, we hope we can keep it up. ■

FORUM

Responce on Smoking

David Lewis

In Vol 14, No 2, Dr Stephen Basser questioned several assertions made by David Lewis in his original article about the accuracy and relevance of anti-smoking campaigns. We promised Mr Lewis the right of reply and here it is.

I suspect that more than a few readers must be grateful for Dr Englin's restraint in not regurgitating the entire contents of his tomes on epidemiology, respiratory medicine etc and "boring the editor beyond publication" (Vol 14, No 1). Instead he shifts his ground to the old aesthetic argument advanced long ago by James I, that smoking stinks! It would be difficult to feel the same charity towards Dr Basser who maintained an incessant barrage (Vol 14, Nos 1-2), nay a veritable Blitzkrieg, for some six pages. I shall therefore try and be as concise as he was verbose and it will probably be most profitable to see where we agree. After all the smoke and dust has cleared I think we can say of his rebuttal that the mountains have laboured and brought forth a mouse. My second article advanced three propositions:

- * that there is no plausible evidence incriminating passive smoking;
- * that smokers enjoy the same life expectancy as non smokers;
- * that smoking may actually confer certain benefits.

Dr Basser ignored the first, beat all about the bushes in pursuit of the second and grudgingly allowed the third although he put his own negative spin on it with the rather incongruent and irrelevant analogy of excessive valium ingestion.

Ignoring most of his rather uncharitable innuendoes against my integrity, I might defend myself against just one of his unpleasant implications. My information about the Australian Bureau of Statistics findings came from fellow sceptic Dr John Farrand's recent book "Don't Panic: PANIC". This interpretation was also taken by *The Australian*, a (London) *Times* article (Behind the Smokescreen - 19-7-94) and a radio news item so it appears not to be an unreasonable inference.

My "glaring" failure to cite Rose's 1992 study¹ was occasioned by nothing more sinister than my ignorance of its existence. Subsequent inspection of this document reveals that Dr Basser seems not above a little selectivity himself, citing "reductions of 7% for total mortality" in the intervention group when the authors also say, "After 20 years there were about 3% more survivors in the intervention ... group". (This puts smokers at a similar, or slightly better,

risk than left handers versus right handers.²) Admittedly this was said in the context of several factors weakening the survey, one of which was that after ten years, so many in the Normal Care group had given up smoking anyway that the differences became minimal. However, a striking feature of the first decade had been a very significant increase in cancer deaths *other* than lung cancers in the Intervention Group (six in Normal Care and twenty three in the Intervention Group at eight years), which was bravely ascribed to 'chance'. Somewhat to their relief, one suspects, by twenty years this difference had almost disappeared. An inference that they didn't explore, but which seems quite legitimate, is that the spontaneous abandonment of smoking by many of the Normal Care group by ten years lost them the protection against other cancers that smoking had apparently conferred. This hypothesis aligns with the recognised protective benefit smoking affords against a number of conditions. For example, Louise A Brinton et al's 1992 study said "It would appear now from a number of studies that smoking reduces the risk of endometrial cancer".³

That said, we are at least and at last agreed that lung cancer is not a common condition - even amongst heavy smokers. This is a very refreshing admission from such a fervent anti-smoker because at last it gives us a more truthful perspective on the "problem". Yet the general public could well be forgiven for taking the plain English intent of prominent warnings like "Smoking Causes Lung Cancer" and Dr Nelson's "It is not even safe to be in the presence of someone who is smoking" to mean it's an almost inevitable consequence.

I suspect most reasonable people would be fairly disgusted to discover that, after all the panic and hysteria, the real proportions of the problem are that heavy active smokers have a 99.7% chance of NOT developing lung cancer. This was the thrust of the conclusion to my original article that these "... wild exaggerations may eventually backfire on the credibility of the medical profession". Dr Basser's laborious catalogue of authorities were then hardly necessary because I have never disputed that there may be a link (whether causal or merely correlative) between smoking and disease; my argument has been mainly with its dimensions. Even after expending so much intellectual energy I am still not sure that Dr Basser has made a very convincing case against smokers life expectancy. A 3% reduction in overall mortality amongst quitters over 20 years seems scant reward for virtue (Rose's study) and it doesn't seem to square with the 18 years of life

lost mentioned to me recently by Dr Chesterfield Evans or the 23 years estimated by Professor Peto (Lancet 1992 V339 1268). I wonder if Dr Bassler would be game to publicly agitate for draconian and sinister legislation and a massive propaganda campaign on the up-front admission that the worst risk is a 99.7% chance of NOT getting lung cancer!

Dr Bassler is concerned not to be “tarred” as a zealot himself but he seems not to mind the zealotry that he recognises exists. He complains bitterly about my lack of “science” but apparently makes no attempt to correct the flaws and hyperbole of Dr Gray or the misrepresentations of the Federal Court by other prominent anti-smokers. That Dr Gray’s article could have passed the referees of the *Medical Journal* encourages little confidence in their objectivity either,

particularly when a variation of my *Skeptic* (Vol 13, No 4) article was rejected on none of the objections Dr Bassler has canvassed, but on the very dubious grounds that one of my authorities was last heard to be a consultant to the tobacco industry and that “giving the tobacco industry’s proponents a forum ... is a waste of time”. (What are we to think of the credibility of authorities who consult with the Cancer Council?) Similarly, I’d be more impressed with his emotive appeal about saving the lives of those with

uncommon conditions like lung cancer if he was proportionately agitated about more common dangers such as the manifold effects of alcohol or the fact that simply being male costs several years of life expectancy.

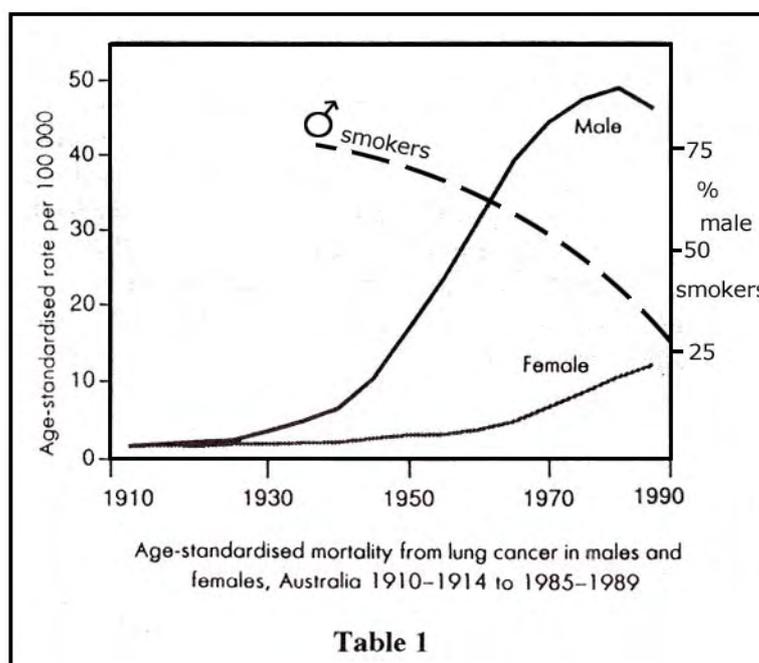
I wonder too if Dr Bassler isn’t nit-picking when he will not accept my claim that female smoking rates have remained “fairly constant” because I can find no suggestion that they’ve varied by more than a few percent over the last fifty years. This consistency (or slight decline) has not deterred professor Nutbeam 4 nor Medical Writer, Steve Dow (*The Australian* 6/7/94) from attributing respectively a sixfold and a threefold increase in female lung cancers to smoking. Dr Bassler then claimed that in the late 1980’s more women were dying from lung than from breast cancer, but I found this difficult to reconcile with the figures in Australia’s Health 1994, which showed (p 86) that in 1988 there were nearly twice as many breast cancer deaths as lung cancers (and four times as many diagnoses).

I then checked one of his job-lot of six authorities cited to show the alleged relationship between smoking trends and lung cancer incidence - The Lung Cancer Epidemic in

Australia, 1910 to 1989. I reproduce their graph on which I have superimposed the generally agreed smoking rate for males (table 1).

As I’ve remarked before, it seems very difficult to blame the steadily declining male smoking rate for the steadily rising male lung cancer rate, even allowing for a 20+ year gestation period. And is it really reasonable to suppose that when people had been smoking for at least fifty years with no apparent ill effect, lung cancer suddenly emerged from obscurity about 1925? Perhaps previously it was massively under-diagnosed? Or is it being massively over-diagnosed these days, especially among smokers?

To further illustrate the pitfalls of attributing too simplistic a relationship between smoking and disease, let us briefly



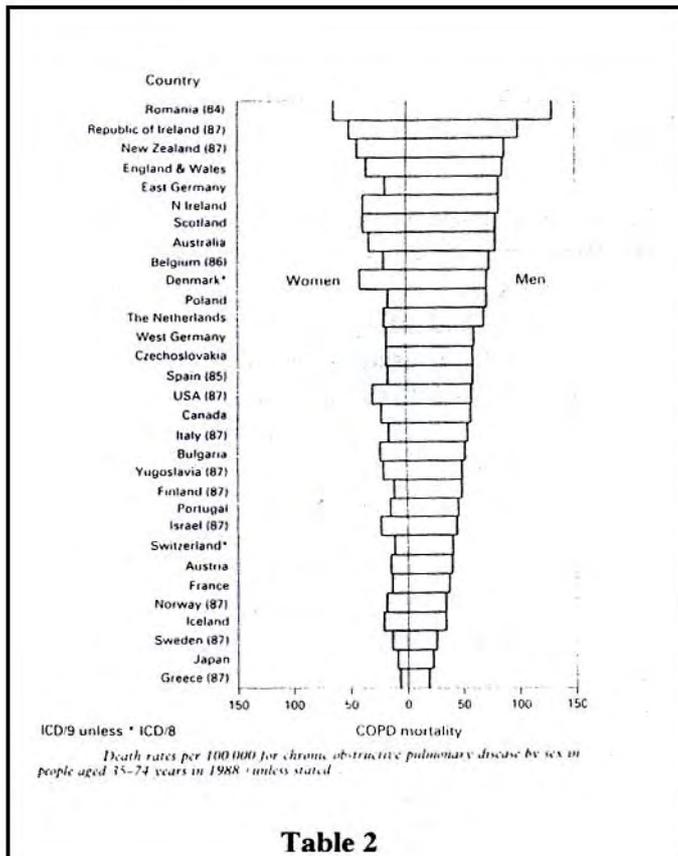
consider CA Brown *et als* 1993 study entitled “Failure of cigarette smoking to explain international differences in mortality from chronic obstructive pulmonary disease” (*Jnl Epid Health* 1994; 48: 134-139). I reproduce two tables (Tables 2, 3) showing death rates and smoking rates, from which it immediately be seen that the two countries with the lowest death rates have the highest smoking rates! Readers might like to explore some other anomalies such as that English speaking countries loom large among the top ten

despite having modest smoking rates. Could this be what Shaw meant by “the cold blooded murder of the English tongue”?

Though I must thank Dr Bassler for his close interest in my articles and for pointing out one or two innocuous errors, I hope that my articles have at least:

- * broached the possibility that the anti-smokers may not be entirely infallible;
- * defined the dimensions of the “problem” and set some parameters for the hitherto unbridled claims of the anti smokers; and
- * opened a line of sceptical enquiry into the previously prohibited inner sanctums of the anti-smokers.

That even the anti-smoking high priesthood should be open to question is surely self evident in a democratic society. Ironically, the fact that they have managed to elevate themselves into infallible oracles may actually be counterproductive to the every purposes they are pretending to achieve. Professor Eysenck has researched the smoking question for some 40 years and claims to have discovered a



Country (y)	% Current smokers	
	Men	Women
Australia (1986)	33.0	28.0
Austria (1981)	33.0	22.0
Belgium (1984)	35.0	21.0
Bulgaria*	-	-
Canada (1987)	36.0	32.0
Czechoslovakia (1984)	57.0	14.0
Denmark (1987)	49.0	38.0
East Germany*	-	-
Republic of Ireland (1982)	39.0	32.0
Finland (1985)	35.0	17.0
France (1983)	50.0	29.0
Greece (1985)	54.0	13.0
Iceland*	-	-
Israel (1987)	38.0	25.0
Italy (1983)	46.0	18.0
Japan (1984)	66.0	14.0
Netherlands (1983)	44.0	35.0
New Zealand (1981)	35.0	29.0
Norway (1986)	39.0	31.0
Poland (1985)	60.0	34.0
Portugal (1984)	37.0	10.0
Romania (1980)	48.0	13.0
Spain (1982)	58.0	20.0
Sweden (1986)	26.0	28.0
Switzerland (1981)	46.0	29.0
United Kingdom (1988)	33.0	30.0
USA (1987)	31.5	27.0
West Germany (1984)	44.0	29.0
Yugoslavia*	-	-

* Data not available.

The percentages of current smokers (year in brackets) for both men and women

Table 3

far more reliable predictor of people's susceptibility to cancer and coronaries than smoking - his types 1 and 2 categories respectively. In itself, he says that smoking has no more predictive value of cancer and coronaries than your shoe size or eye colour though he accepts that smoking and other factors appear to have a synergistic or multiplicative effect in susceptible subjects. He also claims considerable success in reducing the risk in predisposed people. Unfortunately, such is the cyclone of witch hunting hysteria against smoking, predicated on the simplistic orthodox view, that his promising anti cancer research is being marginalised and almost ignored. It would be an ironic tragedy indeed if the almost universal stifling of discussion about the smoking question also stifled a more effective cure or prevention of cancer and coronaries.

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4. Nutbeam D et al, Goals and targets for Australia's health in the year 2000 and beyond. 1993 p 44. ■

Another View

One would expect that an obviously well researched response (Dr S Basser, Vol 14, No 1) and some serious questioning of the use of statistics in D Lewis' article (Vol 13, No 4) would have been enough to put a stop to publishing his obviously badly founded ideas about smoking and its risk.

Not so. He is not only given plenty of room to respond to the response, but also the opportunity to start up a whole new discussion before the first one even finished (Vol 14, No 1, p57). What are the editorial plans for the future of *the Skeptic*? The ultimate backstroking machine for the persecuted community of smokers?

347 deaths per 100,000 heavy smokers (D. Lewis, p.54) sounds indeed like a very small risk to take for the combined pleasures of being addicted to a cocktail of unhealthy substances, losing your sense of taste, smelling badly all the time and annoying your fellow humans. But only if you ignore the minor fact that 347 per 100,000 is the rate for one year (S. Basser, p.47). Come the next January 1, the countdown starts afresh. If you continue to play this game for 30 to 50 years, as I suspect most heavy smokers do, you arrive in the vicinity of the risk posed by a bout of Russian Roulette.

Not exactly as safe pastime, and I believe most people would not regard themselves as "extremely paranoid" (D Lewis, p.54) when they see this activity as extremely risky and consequently stay out of it. To be more exact, after 30 years, 1 in 10 heavy smokers will have died of lung cancer; after 50 years, it's down to 1 in 6. Taken a population size of

100,000, after one year 100,000 * .99653 are still alive; after two years 100,000 * .99653 * .99653 etc. After 50 years, 100,000 * (.99653)**50 survive. Some assumptions for even distributions and the like apply.

Mr Williams, you “can recognise a dud argument when you see one” (p.56)*. Either you don’t read your own magazine before it goes to print, or this is just another unsubstantiated claim that should give rise to serious sceptical investigation.

Dr.-Ing. Klaus Jahn
Lower Plenty, VIC

And Another

As a very recent subscriber to *the Skeptic* after reading and being impressed with Harry Edwards’ submissions to *The Manly Daily*, I am rather overawed by the statistical prowess of your contributors. They are obviously way ahead of anything I could achieve unless I took a sabbatical from my present busy life style.

However, I have a contribution to make on the tobacco issue. During the war, I was called up in the UK into the Royal Navy as a radio operator. We were given a tobacco issue every payday, with a choice of pipe or cigarette tobacco, which they called “tickler”. Tailor-mades were sixpence a tin of fifty, and the odd comforts parcel always included more of the same. Wireless offices were traditionally force fed by the ship’s fan ducted system, but the atmosphere with everyone puffing was best described as “thick”.

My elder brother had joined as a sparker a year before me and served on MTBs. Postwar, my brother soon developed emphysema and died from the effects of the surgery. I continued to smoke but finally gave it away about six years ago because it effected my jogging.

I can still recall Grandfather Jolly and the nicotine stain down his beard, where the traditional pipe hung, which I had to kiss whenever we visited them in London. He died, not from nicotine, but fell over and banged his head whilst returning from the local where he had gone to pick up his favourite pickles. He was over eighty!

If there is anything that all of this proves, surely it must be that some people shouldn’t smoke, the same as others shouldn’t take up bungy jumping and skydiving.

Put this mixture into the political arena, where some would do almost anything to win a few votes, and you have the current recipe for legislating to change attitudes, a lost war if there ever was one, and a lesson the Yanks learned from prohibition a long while ago now.

Alan Jolly
Elanora Heights NSW

*Dr Jahn, I claim to be able to recognise a dud argument. I am not arrogant enough to assume that I know more about every subject than our correspondents do. **BW**

They Want to Know

My husband and I recently attended an information evening on “Reiki” and we left feeling angry and concerned at the con-job we witnessed, and the way vulnerable people were being deceived and manipulated.

The ‘facilitator’ used: light trance induction; hypnosis; dowsing to supposedly measure the aura; gave a cold reading; made references to faith and psychic healers in the Philippines; mentioned Sai Baba’s vast aura and of course used anecdotal evidence of Reiki, as a part of her well rehearsed routine.

It would appear to be cult like, operating as a pyramid type scheme, so I am told.

I received several promotional leaflets. They make outrageous claims as to what can be healed by Reiki: “It has been known to aid in the cure of diseases as serious as cerebral palsy, cancer, multiple sclerosis, hearing and sight loss, heart disease as well as serious injury” (from one of the brochures). However, it is not powerful enough to heal the leader (Beth Gray) of this particular organisation (apparently there are several). We were told that she suffered a severe stroke not so long ago, and no amount of Reiki has made any difference to her condition, however that has not deterred the believers.

Like mushrooms after the first rains, Reiki seems to be popping up everywhere and as yet I am not aware of any critical reports having been done on it. I do know it is very expensive to learn the techniques and to be initiated into Reiki.

My query, therefore, is, have the Skeptics looked into Reiki, and if not, would you consider doing so at any time.

Robyn Arielli
Noranda WA

* * *

Colin Weekes, of Coogee NSW, wants to know if anyone has any information on claimed ‘miraculous’ cures at Lourdes.

As we understand it, the Catholic Church has appointed a commission which investigates claimed miracle cures emanating from Lourdes.

In the over 130 years since the ‘vision’ many millions of sick people have made pilgrimages to this French city (currently around 5 million per year), and not unnaturally, a lot have claimed to have felt better. Whether the majority of these had anything wrong with them in the first place is another matter and, of course, the vast majority show no improvement.

The Catholic commission has nominated something like 60 cures as being miraculous. More information is available in James Randi’s *The Faith Healers*, but we would be interested to hear from any of our readers on this topic.

Bible Doubts

I wish to make a few comments on the article "Fundamental Doubts" by David Lewis which appeared in a recent issue of *the Skeptic* (Vol 14, No 2). The article commented on various perceived contradictions in the biblical text and on some difficulties in accepting traditional Christian teaching.

I have no wish to defend much of traditional Christian teaching on Hell and the Devil as it has its roots in pagan Greek and Roman beliefs rather than the Bible. However, some of the alleged biblical contradictions mentioned in the article showed more prejudice than clear-thinking scepticism. I welcome any sceptical analysis of the Bible and traditional church teaching, but it should be based on informed scholarship.

Here are five examples of how the problems raised in the article can be easily answered by any informed Bible scholar.

1. The genealogies of Jesus recorded in Luke and Matthew are different and David Lewis claims "they can't both be true". However, it is widely accepted amongst biblical scholars that Matthew follows the line of Joseph, Jesus' legal father, while Luke traces the line of Mary, Jesus' natural mother. Genealogies were not normally traced through a mother, but since Luke is speaking of a virgin birth, this case is unique and we have no information as to how an ancient Jewish genealogy would be reckoned when there was no human father. Nevertheless, it is certainly possible that they are both true.

2. Similarly, statements that imply Joseph was Jesus' father are no more contradictions than when we refer to the legal father of an adopted son as his "father".

3. David Lewis claims, quoting Luke 2:48-50, that Mary was surprised at the discussion between the 12-year-old Jesus and the Jewish elders. He says "this does not ring true" from a woman who knew that her son was the Son of God. But the passage quoted says that

LETTERS

Letters to the editor on any topic of interest to other Skeptics are welcomed. They should be confined to no more than two pages of typed script.

Mary was surprised that Jesus had not informed them of his intention to stay in Jerusalem. This is quite understandable from any mother, even if her son is the Son of God. There is no indication that she was surprised by the discussion, although others were.

4. The famous prophecy of the virgin birth is from Isaiah 7:14, not Isaiah 2:22-23 as given in the article. David Lewis claims the Hebrew word *almah*, translated here as "virgin", actually means "young woman". However, Hebrew scholars disagree. The word occurs seven times in the Hebrew Old Testament and in no case is it clear that an *almah* is married. The general consensus amongst ancient Hebrew linguists is that the word probably means "unmarried girl" and by implication "virgin". The Septuagint (the Greek translation of the Old Testament) uses a term which unambiguously means "virgin". Since this was translated by Jews before Jesus was born, there is no possibility of textual distortion due to prior beliefs about the birth of Jesus. There is no reason to believe their translation of the word is inaccurate.

5. David Lewis claims that the four gospel accounts of the resurrection are contradictory. Being four personal accounts from quite different perspectives, it is certainly difficult to piece together the full story. The same problem occurs in harmonising several eye-witness accounts of a crime. Each emphasises some points and omits others. And like eye-witness accounts, the resurrection accounts can be harmonised. For example, "Easter

Enigma" by John Wenham (Paternoster Press, 1992) gives one possible harmony which accounts for all four gospel records.

Rob J. Hyndman
University of Melbourne

Mutilations

I shuddered throughout Harry Edwards' article "Volunteers wanted ..." (Vol 14, No 2, pp 22-25). The photographs of the mutilations are ghastly - why on earth do 'intelligent' people promote such horrors?

However, all the wounds shown are stab wounds, not cuts.

Without wanting to detract at all from the courage of the participants (courage or stupidity?), stab wounds are very different from cut wounds.

In the early 1970s, I conducted a large experiment involving over a thousand endoscopic examinations of the ovaries of sheep. The long, slender instruments (rather similar to the sharp rods shown in the photographs) were introduced into the abdomen through three stab wounds. The skin (the toughest part) was cut with a scalpel, and the body wall pierced with a trocar - a pointed solid rod.

The stab wounds through the body walls essentially pushed tissues and blood vessels aside rather than cutting or breaking them. These wounds were never associated with bleeding.

After the operation, the instruments were withdrawn, and the layers of the body wall slid making the hole no longer continuous. The wound in the skin only was closed with a metal clip. The stab wound through the body wall required no suturing.

Of the three thousand plus stab wounds made in this way none led to any problems at all.

These observations may modify a reader's interpretation of the photographs of the mutilations in the article.

As for piercing organs and blood

vessels, these would be different stories all together.

Professor Jarvis' comments about repeated insertion at the same point through scar tissue make the mutilations still less dangerous and painful, since scar tissue typically has poorer blood and nerve supplies.

As for pain, the medical and scientific literature abounds with examples of how subjective pain is, and of the effects of drugs, attitude and motivation on the tolerance of pain. Without a great deal more information it is impossible to understand how much the photographed subjects are not experiencing.

Note that these observations were made by a scientist using a surgical procedure to healthy sheep; not a medical practitioner with much greater knowledge of surgery, wounds and healing working with humans.

Anthony G. Wheeler
Andergrove QLD

Cannibalism I

Further to Richard Buchhorn's interesting article on Aboriginal cannibalism (Vol 14, No 1) he appears to have overlooked some evidence right under his nose - Tom Petrie's *Reminiscences of Early Queensland*

Tom Petrie was a boy during the early years of the Brisbane conflict settlement and late in his life his daughter recorded his early memories and published them in 1904. Tom had considerable contact with the traditional aboriginals during his youth and his recollections of their customs and lifestyle are absolutely fascinating. Among these rare personal glimpses of traditional aboriginal life he several times quite matter of factly mentions cannibalism.

However, in the main it appears to be a sort of "conservative cannibalism" in that a body was a food resource that shouldn't be wasted. He also records that the tribes would often carry the

bones of the deceased about with them for some time which seems to square with one quaint remark he records that by eating the dead "we know where they are"!

He mentions a number of discreditable incidents perpetrated by the whites such as poisoning the natives or a horribly bungled public hanging of two aboriginals. He therefore seems quite impartial in his account and his other details of aboriginal life and customs seem to ring true. In general he had a very high opinion of traditional aboriginal culture and mourned the degradation of the tribes in later years. If he can be believed then, it would appear that cannibalism was a perfectly normal aspect of traditional life at least in S E Queensland. Contrary to Richard's suggestion that it was largely mythical everywhere, both Captain Cook's journals and *The Journal of Ensign Best* mention cannibalism in New Zealand and the latter even describes the place as "The Cannibal Isles"!

To conclude on a different topic, Richard or someone else may be able to suggest an answer to a puzzle that occurred to me recently. Looking at pictures of the rich record of cave paintings on Cape York in a *Geographic* magazine I was suddenly struck by the thought that if we divide the number of images into the tens of thousands of years available to paint them they appear to have been inscribed at the rate of less than one picture per century! Since some pictures show guns and horses we can assume they were painting up to very recent times yet on average only once in say 4 or 5 generations would a rock artist appear and even then we must assume he or she only painted one or two motifs! How was such an intermittent tradition perpetuated and what were the rare catalysts that so frequently inspired anyone to paint?

David H Lewis
Ipswich QLD

Cannibalism II

I have only just read Richard Buchhorn's essay on cannibalism (Vol 14, No 1). Richard might be interested to know that when I was employed in the Queensland Dept of Aboriginal and Island Affairs during the 1960s, I had access to a file dealing with a case of Aboriginal cannibalism in North Queensland during the late 1940s. The victim was an aborigine murdered by one of his fellows. The culprit ate part of his victim's liver. He was sentenced to life imprisonment but was released in his old age. He is now deceased. I do not recall any psychiatric report suggesting that the cannibalism was a case of individual pathology. Most likely the act was generally seen as a regression to past tribal practices.

John Snowden
Tarragindi QLD

Coriolis Force

Tony Wheeler's "Coriolis and the Bathtub" (Vol 14 No 2) gives an illuminating description of how the Coriolis force works.

However, his first two thought experiments, which involve a rocket going directly upwards from Melbourne, are in error. He says that "since our rocket would share Melbourne's eastward motion of 2821 km throughout its flight, again we would land where we took off from".

In fact, if the rocket maintained Melbourne's eastward speed "V" of 1320 km/h throughout its flight, its angular velocity = V/R around the earth's axis would fall below that of Melbourne (15 degrees per hour) due to rising to a greater radius "R". Thus on descending vertically it would find itself westward, perhaps in Bacchus Marsh.

Moreover, conservation of angular momentum requires that $Mass \times V \times R$ is constant. As height increases, eastward speed actually falls. Thus the rocket will land even further to the west, maybe in Ballarat.

This is a legitimate example of the Coriolis effect at work. A practical application is in launches of sounding rockets from Woomera, where this effect helps move the payload to the recovery area to the west. It also shows the unintuitive nature of many aspects of orbital mechanics!

On another note, I enjoyed the articles on plughole spirals and unicorns in *the Skeptic*, (Vol 14 No 1). But there is a major question left unanswered: do unicorn horns (or narwhal horns) spiral clock-wise in the northern hemisphere and anticlockwise in the south?

Ian R Bryce
Rozelle NSW

PS: There could be a mechanism - speed of growth and Coriolis force!

Selective advantage of scepticism?

Most human have an unreasoned belief, at least some of the time, in some or many of a whole galaxy of unlikely or even impossible things, eg virgin birth, rising from the dead, immortality, faith healing, crystal healing, astrology, various psychic phenomena, UFOs, etc. Most members of our species are gullible most of the time. Sceptics are relatively rare. Why might this be so?

In the evolution of man surely scepticism has been an advantageous characteristic of great survival value. Surely? I would hope so, but when I try to think of good examples where scepticism is likely to increase our chances of survival or reproduction today, I cannot think of many. A sceptic might be more likely to ignore quackery

and seek more scientific advice and thus survive some medical situations where “proper” treatment increases the chances of survival. In this day and age, there are not many people whose beliefs influence their treatment: doctors tend to do what they have to do.

Secondly, a sceptic is less likely to die for a religious cause than a believer, but mortality for faith does not account for too many deaths in our society, at least in these times.

On the other hand, it can perhaps be argued that gullible believers are more likely to survive times of severe social or personal stress because believers tend to belong to groups which provide support which reduces mortality from suicide and starvation. (If this is the answer, I fear for the future of man!)

Most of the unlikely and impossible things that we believe in are seldom of survival value, and we pretty soon give them up if they are a threat: few have been burnt at the stake! People who hold an unlikely or impossible belief often discard it, but seem to adopt another which is equally unlikely or impossible. Perhaps as we have become more civilised and have developed a sophisticated technology, natural selection has almost ceased to act to eliminate gullibility.

I have used the word “gullibility” almost as if I expect that there are dominant and recessive genes for it. I think it is more complex than that and probably is determined by a whole host of interacting genes. There is obviously a fairly significant environmental component also. And finally I suspect gullibility does not have a lot to do with intelligence or the lack of it. But I have been wrong before this. Will somebody sort me out. Why are sceptics rare?

William H. Ewers
Warrnambool VIC

Memories

I would like to know how the modern myth that our memories are somehow encoded in fleeting electrical signals originated.

It is a widespread belief. A straw vote I took showed that more than half asked believed that memories are either stored as electrical impulses, or electrochemicals, or even resonances in our brain.

Common sense would tell you this simply can't be true.

Think of your childhood. Now try to remember what type of shoes you wore to school. I wore heavy lace-up boots with steel toecaps. See, this is a memory that is decades old (at least for decrepit old wrecks like me) and something I haven't bothered to think about in years. Yet, it was stored in a structure so stable that it has survived long-term neglect. And not just neglect. I have been unconscious a few times, concussed at least once, occasionally pickled my brain with intoxicating chemicals, spent hours bathing myself in the radiation from my TV, walked in front of microwave ovens and been electrocuted (non-fatally) four times. But the memory has stuck fast. Fragile electrochemicals could never have handled all that.

Scientific discussions talk of electrical currents forming, by the release of Ca^{++} ions, when a brain cell is stimulated, but this is a brief event. It leaves behind a legacy of complex and cascading chemical reactions. These will dampen down unless the event is reinforced by further stimulation to the cell, or strategic nearby cells. Repeated stimulation can lead to semi-permanent changes to the chemicals in the synapses, activation of DNA segments, long-term potentiation, growth of cell connections and finally a solid memory. Something built to last.

Although researchers admit there are many links in that chain, but I have never heard one, past or present, who has said that memory is due to electric

currents or something similar.

So where did the myth come from? And how has it persisted against common sense. Any ideas?

Marta Sandberg
Bridgetown WA

Dog Sex

Having just received the latest issue of *the Skeptic* (Vol 14, No 2), I'm afraid that my first letter, as a member, is to criticise a fellow member's letter from the above issue. In the dog on the Tucker Box letter, the writer, Adam Joseph states in his second paragraph, "I did observe a mistake of major proportions. The dog on the Tucker Box is in fact a bitch!"

I'm afraid I cannot agree.

"Dog", first and foremost, quote Oxford Dictionary, is: "n. 1. carnivorous quadruped of genus *Canis*, of many breeds, wild and domesticated".

Whatever the sex of this dog, it is irrelevant (maybe not to the dog, but certainly for the purpose of this rebuff). Whatever the sex, it is still first and foremost a member of the species, dog. So it is still 100% correct to say the Dog sat on the Tucker Box.

In fact, the original verse of the famous song states that the dog actually "shit" on the tucker box, not sat on it. Another version ends:

"So I buried him in the tucker box
Nine miles from Gundagai."

As far as the missing genitalia from the Gundagai dog is concerned, one can put that down to our problem in the past with things sexual - is it any wonder that the dog has no genitalia showing at all, male or female. Let's not forget that in the sixties when Michelangelo's famous status David was brought to Australia for exhibition, it was seriously suggested by some of our well known wowsers of the day that the genitals be covered over. Incredible, but true.

Ed de Havilland
Canley Vale NSW

Fire Walking

On the 10th of July 1994, a firewalk display was staged by the Hellenic Club of Canberra. According to my friend who attended this display, the three men had to be prepared for three hours in order to accomplish the walk. Again, about a year ago, two gentlemen from my Department paid \$2,000 each for a week-end seminar on Personal Development in Sydney, the highlight being the display of their ability to control their minds to walk on fire.

In the early 70s, while growing up in India, my brothers and I attended a firewalk display in Madras. Preparations were well under way when we got there. Sitting in front of a young man with Merv Hughes moustache and white lines all over his body were two high pitched, water spraying priests, calling on the gods to offer protection. A group of men was doing some wild dancing to the beat of two drummers. Logs of wood were intermittently being added to a hot coal bed of about four feet by ten feet. Just as the crowd was starting to lose interest, the priests shifted into a soprano pitch, the drummers and the dancers went into some frenzy and the young man got up and started his firewalk amid "aaaahs" and "ooooos".

The climax was going to be the next act in which the young man was to be blindfolded and made to carry a heavy sack of rice on his head while daring the walk, something that had never been tried before. While he was being blindfolded, four young boys of about 12 years old ran up and down the bed a few times until forcibly removed by the dancers. When finally the premiere act was performed, it attracted only a handful of "aaaahs" and "ooooos".

Sir, next time, there is a firewalk in Canberra, I'd like to try the walk myself in a Skeptics sweatshirt. I hope a few other Canberra Skeptics will join me.

Jeevan Soorya
Dhas Dickson ACT

Touched

An article about Therapeutic touch (Vol 14, No 2) made me think of current trends in education. "Schools renewal" (an all-encompassing term) includes some processes of dubious and untested nature. Some people suspect that the main criterion for promotion of some of the ideas is approval of participants in courses and a delivery time of four hours (which fits the standard "in-service" time slot).

It is not only nursing schools which seem to follow a "try after you buy" method and plan to evaluate procedures after they have been in use for some years, and even then, probably not by scientific methods.

Noel D. May
North Rocks NSW

See a further note about therapeutic touch in *News and Views* in this issue.

Ed

Hypnotism

The interview by Adam Joseph of Martin St James (Hypnosis: Who says so? Vol 14 No 2) asks some challenging questions about the nature of hypnotism. Can a sceptic or scientist be hypnotised? The answer may be found on "Livewire", Radio National, on 17 April 1993, when St James hypnotised a group. Unbeknown to him, one of the subjects was yours truly. All concerned thought it hilarious (except me)*.

I have also undergone clinical hypnosis, and was found to be a good subject. I would be happy to assist, should anyone wish to conduct serious inquiry.

Ian R Bryce
Rozelle NSW

*Ian's recapitulation of a Keating campaign speech on this occasion will remain an inspiration to all who were lucky enough to have heard it. **Ed**

Boob's Law

I was charmed by a section of a paper in your latest journal (Vol 14, No 2) by David Hagar where he states 'Boob's Law: I will always find a lost item in the last place I look'. This was given as an example of negative synchronicity (NS), which I always thought happened to me on the dance floor, or when I eat soup.

This law, however, needs to be investigated further. What if you found things the first place you look? Eg, I've lost my glasses - why here they are, right in front of me (delete exclamation mark as requested by editors). Does this denote psychic powers, considering that the subject here, myself, can otherwise demonstrate NS?

A more difficult concept might be: "on the middle of a dinner party conversation I suddenly lost my tongue". What would one do? Normally a lost tongue can be found without looking, but some people, myself included, seem to search for lost tongues in the bathroom mirror the following morning. This suggests a new law: I will always find a lost item in the second place I look. Why keep searching - just habit I guess.

Ross Jenkins
Bathurst NSW

Unseptical Auntie

Recently I spent successive Monday afternoons in Darwin listening to the local ABC radio station 8DDD FM. On the first occasion, I was "interested" to hear a couple of people having their auras read by someone claiming to be competent in this field. I didn't think too much of this as Darwin tends to attract its fair share of eccentrics, particularly in the dry season.

The following Monday's entertainment contained an interview with a "psychic" named Suzane Myles.

This woman made a number of claims as to "having a third eye", etc, and was in the Territory among other things to talk to Aborigines via a vis mental telepathy, look for haunted houses, and to possibly set up a television programme with a Japanese TV network, and an American researcher named (I think) Lloyd Arbuck. Mr Arbuck was to bring some special machinery with him, including infrared equipment.

The presenter of the programme, Ms Julia Christiansen, hardly came across as a Skeptic, and I wonder why taxpayers' dollars are wasted on this sort of nonsense. If her programme has a paranormal segment each Monday afternoon, she may well prove an early entrant in the next Bent Spoon award.

As a new member, I am not sure whether the Skeptics as an organisation tries to keep tabs on all of the people that make such claims. Have they come to your notice before?

Perhaps some transcripts from the programmes would be of interest.
Lyll O'Donoghue
Sunbury Vic

Feng shui

I continue to be astounded by the way that feng shui continues to gain unchallenged acceptance as a valid philosophy and life-style by the media. To me, it seems that the cult's hucksters have simply devised a legally unassailable method of getting money from the gullible.

The description of feng shui as "acupuncture for houses without the needles" is particularly apt. Both cults indulge in pseudo-scientific jargon, and promulgate theories which cannot be tested or even checked. Practitioners of both cults are careful not to claim that their methods will certainly give improvement. Acupuncture postulates numerous points on the body, set out in elaborate charts (which most orthodox doctors claim are largely arbitrary).

Using sterilised needles, any harm to the patient is unlikely, but even if no traceable improvement is noticed, there can be a psychological gain, people can feel that they are 'doing something to help' their condition. Whereas it is simply that the body's natural restorative powers operating.

Feng shui similarly recommends practices which ordinary good sense and experience would suggest: houses in Killara, Pymble, Chatswood have a 'better economic future'. Real estate agents have been saying that for years. Feng shui is firmly directed to the affluent - a battler buying a four-room fibro at Emu Plains is obviously not in the feng shui target audience. Fees for feng shui consultations at \$100 per hour - cripes, you could get a consultation with a top brain surgeon for less than that.

It is odd that the powerful forces of bad luck and evil can be so easily thwarted by feng shui - the installation of a mirror or wind chime (whether of wood, glass, metal or plastic does not matter, apparently).

I can understand architects, designers and builders going along with feng shui pronouncements. If the customer demands it, go along with them, just as builders and plumbers go along with Muslims who demand that their bodies do not point towards Mecca when they defecate. (Did you know that some zealous world-travelling Muslims carry a special compass to avoid sinning while in foreign countries?)

Feng shui claims to sometimes to be related to geomancy, but this is doubtful. Geomancy is divination from the shape of a handful of earth thrown on the ground, or from the lines or figures naturally formed in the earth.

Just another target for the Skeptics!

Ben Bensley
Normanhurst NSW

Despair

I sympathise with Lynn Kelly (*Letters* Vol 14, No 2). Sometimes the task seems too great. Recently I was discussing *the Skeptic* with a work colleague. I described the water diviners tests, set up with the co-operation of diviners, and how their success rate dropped to chance levels when the water bottles were randomised. Her reply, "But how do you know that their successful finds were not due to divining ability?" Aaaaahhhhhhh!

While perusing the career leaflets in the local CES, I was astounded to find leaflets covering "Chiropractor" and "Naturopath. It appears that the CES and DEET consider any occupation, no matter how useless (or dangerous) an acceptable alternative to paying the dole. While they're at it, why not include leaflets for "Psychic", "Faith Healer", "Psychic Surgeon" or "Witch Doctor", or is this last one covered by Naturopath?

Jim Goulter
Casino NSW

Latin and other strange words

Obviously the Editors of *the Skeptic* are fine fellows, (Obviously. Eds) but now and again they make typos which make me look uneducated and, not unreasonably, confuse such as James Marchant. I hope this isn't a penchant: it's unlikely because they aren't *hoi polloi*, and it's probably as much their *bête noire* as it is mine. But *chacun à son gout* doesn't apply; *au contraire*, it was a *faux pas*. Since accuracy is part of *the Skeptic's raison d'être*, an *erratum* is needed and so here it is.

In my letter I indeed suggested *Magna Opera*, as did Peter Arnold. Unanimity rules. It is important to get Latin right - every conversation I've had with the Pleiadians, for example, has

been in Latin.

Harry Edwards, in his article about the Paramann Laboratories (Vol 4, No 2, p 25) mentioned the International Association for Psychotronic Research. I have a little information on the word "psychotronic" for the databanks of the International Skeptic Conspiracy. I heard a talk in 1990 by a "Dr" Robert Stone, who spoke about a thing called the de Silva method, which seemed to be some kind of mind-improving thing. The talk was laced with terms like "psycho-neuro-immunol-ogy" and the "neuro-eleusic" (or something) field (based on Sheldrake's work) and so you probably get the idea. I was particularly amused by the remark, "Until fifteen years ago, Science didn't recognise human consciousness", but this is a digression.

"Dr" Stone claims to have received the first PhD in psychotronic energy. I asked where he got it from (so I could have a go at tracking down the dissertation) and he replied "fifteen years ago in California", thereby sidestepping the question. Well, if you're in the business of thinking up pseudo-scientific buzzwords, I suppose "psychotronic" wouldn't take too long to crop up. In other words, we can't conclude that there's a connection, but I offer this information for what's its worth to anyone doing Skeptical detective work.

D.G. Colquhoun
Marrickville NSW

Would you like to see your name in print?

Why not write a Letter to the Editor, expressing your ideas about things that have appeared in *the Skeptic*, or about things in general that might interest other Skeptics?

We prefer items to be on disc or via e-mail but we accept written submissions.

Gold in Them Thar Stools

Anyone who has read the overview of artifacts in my book *Skeptoon* will be aware that I am not exactly enamored with the idea that talismans, amulets and lucky charms are endowed with extraordinary qualities. I also believe that some people will fall for anything that purportedly offer good luck. To put this to the test, I wrote the following (I thought obviously tongue in cheek) letter to the local newspaper (*Manly Daily* August 3, 1994).

"One occasionally hears of someone who used to be a sceptic until they had an inexplicable experience. I never thought it would never happen to me and hasten to tell the world.

I have a pet chicken that answers to its name, cheeps like a canary and perches on my shoulder like a parrot.

Inevitably, while observing the world from its perch, it leaves a calling card on my shoulder which, according to a meticulously kept record and collation with subsequent events, has proved to be a precursor of good luck.

Over the past few weeks I have won Lotto, had money returned to me that I had forgotten about and received a large order for my recently published books.

My son, whose shoulder the chicken also uses as a perch, has had similar luck. On two occasions he has found wallets containing large sums of money which he had returned to owners and received rewards, on others, a watch, an unused telephone card, a pensioner's card and a clock.

Believing that this extraordinary run of good luck had to be more than mere coincidence, I had the chicken's feathers read by a palmist, checked its horoscope and consulted a past life reader who confirmed that it was a reincarnated philanthropist and that I should spread the good luck around by selling the product. Anyone interested in purchasing my lucky chicken crap at \$10 for 5 grams, plus instructions on

whereit should be applied, should send me a money order together with a SAE as soon as possible. I don't know how long this will last and constipation could ruin everything."

Although I am well known in the district as a sceptic of all things paranormal and have had many letters published in the same paper, believe it or not, within a week of publication, I had had two orders for the lucky crap. I did return the money, with a note telling the recipients that they were 'lucky they had met an honest man, but I now wonder if there is any proposition, no matter how ludicrous, that someone will not believe.

Harry Edwards
Newport NSW

Pope a Skeptic?

The time has come for (one of) the big (and I mean really big) questions to be answered - IS GOD A SCEPTIC!!! (In this case the !!!s are justified!)

Paragraph 2116 of the "Catechism of the Catholic Church" published in June 1994 states:

"All forms of divination are to be rejected: recourse to Satan or demons, conjuring up the dead or other practices falsely supposed to 'unveil' the future. Consulting horoscopes, astrology, palm reading, interpretation of omens and lots, the phenomena of clairvoyance, and recourse to mediums all conceal a desire for power over time, history, and, in the last analysis, other human beings, as well as a wish to conciliate hidden powers."

I move that Pope John Paul II be invited to become our latest patron. For once, he and Phillip Adams have something in common.

Lindsay Ellison
Sydney NSW

An Historical Note

ID Buddle of Pymble NSW sent us this interesting extract he discovered in a 1959 edition of A Dover Science Sampler.

Miners, Take Heed!

"There are many great contentions between miners concerning the forked twig, for some say that it is of the greatest use in discovering veins, and others deny it. Some of those who manipulate and use the twig, first cut a fork from a hazel bush with a knife, for this bush they consider more efficacious than any other for revealing the veins, especially if the hazel bush grows above a vein. Others use a different kind of twig for each metal, for they employ hazel twigs for veins of silver, ash twigs for copper, pitch pine for lead and especially tin, and rods made of iron and steel for gold. All alike grasp the forks of the twig with their hands, clenching their fists, it being necessary that the clenched fingers should be held towards the sky in order that the twig should be raised at the end where the two branches meet. Then they wander hither and thither at random through mountainous regions. It is said that the moment they place their feet on a vein the twig immediately turns and twists, and so by its action discloses the vein; when they move their feet again and go way from that spot the twig becomes once more immobile.

It is a conspicuous fact that these cunning manipulators do not use a straight twig, but a forked one, cut from a hazel bush, or from other wood equally flexible, so that if it be held in the hands, as they are accustomed to hold it, it turns in a circle for any man, wherever he stands. Nor is it strange that the twig does not turn when held by the inexperienced, because they either grasp the forks of the twig too tightly or hold them too loosely. Nevertheless, these

things give rise to the faith among common miners that veins are discovered by the use of twigs, because whilst using these they do accidentally discover some; but it more often happens that they lose their labour, and although they might discover a vein, they become none the less exhausted in digging useless trenches than do the miners who prospect in an unfortunate locality. Therefore a miner, since we consider he ought to be a good and serious man, should not make use of an enchanted twig, because if he is prudent and skilled in the natural signs, he understands that a forked stick is of no use to him, for as I have said before, there are natural indications of the veins which he can see for himself without the help of twigs."

Along with Mr Buddle, we consider it refreshing to see such scepticism about diviners, especially considering the extract came from a 1556 publication by one Georgius Agricola.

As well, we were interested in the prolixity of the style used in the extract, written as it was in an age when writing was a lot more time consuming than it is now. Has anyone ever made a study of the different writing styles pertaining to different times and whether the introduction of mechanisms to make writing easier also tended to make it more terse? ■

**Have you had an
Out-of-Home
experience?
Don't forget to tell
us about your new
address!**

He Wants to Know

I was very disappointed in the lack of helpful response to my queries concerning the myth that the key in which music is played has an effect upon its quality (Vol 13, Nos 1,2,3). It surprises me that amongst so many scientifically trained sceptics there should have been so little interest in assisting me to assess the validity of this myth. Meanwhile I am becoming quite bored by the articles concerning fire walking and the effects of smoking - even more bored than I became by the seemingly endless fascination with Noah's Ark.

I accept the fact that you have put your foot down: "enough is enough ... (correspondence) on this matter is closed". I appreciate that as editor you publish material which you believe will most interest your readers and I cannot complain if I consider other topics to be more worthy of discussion.

However, even though you have terminated further discussion of this myth in your pages, I hope you will be willing to assist me by conveying my unabated interest in this myth to any person you know who is trained in physics and is interested in music. Please give my address to any such persons in the hope that they may contact me. Since you have now instituted the new feature They Want to Know, you might even be willing to let me in the back door by indicating briefly my continued desire for knowledge concerning this myth.

Blair Alldis
PO Box 102

Tinana QLD 4650

For a long and valued subscriber, Blair, nothing is impossible. Any physicist with an interest in music, who doesn't know what this is about is advised to read the back issues mentioned. My only problem with the correspondence was that I had to type it all and I couldn't understand half of the terms used, so I invoked the Editor's prerogative. **Ed**

About our Authors

Prof Dick Champion is Emeritus Professor of Psychology at Sydney University and Treasurer of the National Committee. In the latter role, he prevents the hotheads on the committee from placing all the funds on the favourite at Randwick and in the former, he understands why they want to.

Henry Cecil Edwards (004), the nepheligenous National Secretary, is given his background, an ideal Chief Investigator. As the co-editor of *the Skeptic*, his ambition is to get his hands on the *About our Authors* column.

Dr Colin Groves, anthropologist at ANU and Vice President of the Canberra Skeptics, has had a lifelong fascination with creationism. He doesn't know why but guesses that he was made that way. He is heartily sick of jokes about being the Groves of Academe.

Prof Colin Keay, President of the Hunter Region Skeptics, recently retired from the School of Physics at Newcastle University. An astronomer, Colin is bemused by his recently acquired reputation as a leading expert on plug holes.

David Lewis is a teacher from Queensland. Given his predilection for tilting at windmills, there is reason to suppose that he is the reincarnation of Don Quixote.

Julie Marlow, from Melbourne, works in the film industry and is a dedicated debunker of dubious doctrines, which surely is sorely needed in her chosen field.

Dr Andrew Parle is a Vice President of the National Committee and a physicist working in computers. He is married to a medical practitioner, which makes the question "Who is the proper doctor?" a very tendentious one in that household.

Prof Ian Plimer, geologist, academic, author is simultaneously scientifically correct and politically incorrect, no mean feat for a man who also walks across hot coals in his underwear. Ian's book *Telling Lies for God* will be published later this month.

Dr Duncan Steel is an astronomer with the Anglo Australian Telescope facility at Coonabarrabran, NSW and at Adelaide University.

Sir Jim R Wallaby, doyen of parapsychological investigators, comes from a long line of ancestors. The Darwinian adage that our mere existence proves that our ancestors were biologically successful does not apply in the case of Sir Jim.

Barry Williams, president, editor and amateur building worker, has a word of advice for any potential home renovators - "Don't". Flowers and Get Well cards may be sent to "The Heap of Rubble", Roseville NSW. His ambition is to thwart Harry Edwards' ambition (see previous column).

Dr Joe Wolfe is an Associate Professor in the School of Physics at the University of NSW. He believes, probably correctly, that there is more to the study of physics than which way water goes down plug holes.

We apologise to any readers who sent us items for inclusion in this issue and which have not made it. We hope sincerely that the state of Skeptics' Central Office will have improved sufficiently before the next issue to ensure that all items will have been found.