



the Skeptic

Volume 13, No 1 (Autumn 1993)

Registered by Australia Post - Publication No NBH 8121

views and reviews



UFOs
Strange Energies
Alternate Medicine

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From the President

Elsewhere in the magazine we report on three women whose deaths directly resulted from their being involved in pseudoscientific practices. One died because of her involvement with a cult which promoted faith healing; one died because she became enmeshed in new age practices; and one died as a result of a bizarre experiment with exorcism. None of these deaths need have occurred if only those involved had shown even a trace of scepticism.

This is Australia in the last decade of the 20th century, not mediaeval Europe. We know a great deal about the causes of disease, about human physiology and about mental illness. We know how to treat lupus; we can recognise schizophrenia; we know that breathing underwater is not an option for homo sapiens, yet three women died because of their ignorance or of the ignorance of those around them. In the first two cases, coroners found that there was no evidence that would lead to the laying of criminal charges and in the third case, the inquest has not yet been held.

But it is not the legal aspects of these cases that concern me, it is the sort of mind-set that encourages people to believe that faith healing, exorcism, new age mumbo jumbo and other superstitious holdovers from our prescientific past, are the

appropriate response to anything.

The mainstream Christian churches were less than strident in their condemnation of the faith healing and exorcism events. And, as far as I am aware, no member of the hierarchy of any of these churches has publicly condemned the concept of demonic possession or of faith healing. *New Idea* magazine reported on the three cases in their February 27 edition, expressing outrage that these things happened, yet the same issue contained a dozen pages of spurious advice from astrologers, tarot readers and others, which encouraged the sort of ignorant view of the world that led these women to their deaths.

I am often confronted by people who question me as to why the Skeptics spend so much time in exposing the fallacies of the new age, creationism, faith healing and other superstitious beliefs. Aren't we, the questioners ask, spoiling what is, after all, just a bit of harmless fun? I have never believed that irrational beliefs are harmless, because they foster ignorance and false expectations. And as these three tragic cases graphically show, ignorance, far from being fun can very often prove to be fatal.

Barry Williams

the Skeptic

Vol 13, No 1

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Subscription:
 1993 - \$25.00 pa

PUBLIC MEETING

Human Evolution

Saturday April 10

4.00 pm

Willoughby Legion Club
Crabbes Avenue
Willoughby, 2068

Australian Skeptics, NSW Branch, joins with the Humanist Society and the Rationalist Association in sponsoring a public meeting to hear Professor H James Birx, Professor of Anthropology and Chairman of the Anthropology/Sociology Department of Canisius College, Buffalo, New York, speak on human evolution.

Professor Birx is the author of seven books, including the award-winning *Theories of Evolution* (1984), *Human Evolution* (1988) and *Interpreting Evolution: Darwin and Teilhard de Chardin* (1989). In 1985, under the auspices of Harvard University and the National Museum of Kenya, he was the first anthropologist selected to participate in multi-disciplinary palaeo-anthropological research at both Koobi Fora and the Massai Mara in the Gregory Rift Valley of East Africa. Academic travels have taken him to Giza, Uxmal, Stonehenge, Machu Picchu, Teotihuacan and the Galapagos Islands.

He has lectured around the world on the iconoclastic ideas of Giordano Bruno, Darwin, Wagner, Nietzsche, Teilhard and Marvin Farber and has taught physical anthropology at universities in Canada, Germany and the USA.

Other speakers will support Professor Birx and questions from the floor will be encouraged. There is no need to book for the lecture, so please just turn up at the venue on the day. There will be no charge for the lecture although we may ask for donations to defray the cost of venue hire.

Following the meeting, a fixed menu, two-course dinner will be served in the club. The cost of the dinner will be \$13 per head and it is essential for catering purposes to book in advance.

Please RSVP, for the dinner only, to Mollie Campbell, Secretary of the Humanist Society, on 389 4559 or leave a message on the Australian Skeptics answering machine on 417 2071. ■

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*.

Randi for Convention

Plans are in progress for the biggest Skeptics National Convention yet, as the Victorian Committee announces the inclusion of Psychic Investigator **James “The Amazing” Randi** as the major speaker. The 1993 convention will be run over the weekend of **June 19-20**, preceding the **Great Australian Science Show**, which commences on **June 23**. Full details of all convention activities and venue will be in the next issue of *the Skeptic*. The Victorian Branch, which has been extremely active in the past 18 months, promises a host of surprises.

James Randi, who was last in Australia when he organised the ‘Carlos’ hoax, for Channel 9, s, *60 Minutes* programme, is looking forward to being more public on this visit.

The author of 11 books, professional magician, amateur archaeologist, amateur astronomer, lecturer and founding Fellow of CSICOP, Canadian-born Randi now lives in Florida. He is the recipient of many awards and fellowships from diverse organisations, including the “Genius Award” from the MacArthur Foundation, the National Council Against Health Fraud, the Academy of Magical Arts and Sciences, the American Humanist Association and many others. He has spoken at meetings of the American Association for the Advancement of Science and numerous professional, scientific, medical and academic organisations around the world.

In recent times, Randi has been on the lecture circuit raising funds for legal expenses to fight the action Uri Geller has taken against him in the courts. Recently, a

Miami court has required Geller to demonstrate his ‘psychic’ abilities in the courtroom but to date this request has not been met.

James Randi will also present public lectures in at least two states during his visit. He has promised that his lectures in Australia will be more than just straight talking. He will demonstrate ESP, precognition,

psychokinesis and many other supposed wonders that psychics use to fool the public and scientists.

James Randi’s appearance at the National Convention promises to be educational, entertaining, productive and provocative. Said the late Isaac Asimov of Randi, “Perhaps nobody in the world understands both the virtues and the failings of the paranormal as well as James Randi does. His qualifications as a rational human being are unparalleled”.

The message is then clear. Not only will the National Convention have the Bent Spoon award, the Skeptical Journalism award and amazing surprise demonstrations, but James Randi will head an illustrious array of

speakers to challenge the minds of all.

On **June 19-20**, let’s all try to get to this National Convention and make it the most successful ever.

Pre-booking enquiries can be made from March 1 to Victorian Skeptics, GPO Box 1555P, Melbourne 3001; Phone (03) 850 2816 or (03) 877 2943; or Fax (03) 878 1145.

Full details will be contained in the next issue of *the Skeptic*.



News and Views

On New Year's Eve, the ABC morning programme featured an interview with Barry Eaton, ABC news-reader and 'qualified astrologer'. Mr Eaton pointed out, quite accurately as it happens, that during 1993 there would be a conjunction of the planets Uranus and Neptune and then sought to draw conclusions for the human race from this perfectly commonplace fact of orbital mechanics. The following is a list of his predictions for 1993 that I managed to jot down:

On the world scene, there will be quite a lot of chaos around the world; a major civil war or disturbance in the first part of the year; people will be demanding that authorities do something about this; a major political assassination will cause worldwide repercussions; Saddam Hussein will be building up an anti-Christian or anti-Western crusade in the Middle-East; there will be major set-backs in Iran; there will be a 'quantum leap' in computer technology.

In Australia, there will be an election in the first half of the year; if it is held in March/April, the coalition should win easily; if it is held in May the result will be closer, but there could still be a change of government; there may be an 'economic breakthrough' in the second half of the year; there will be more corruption trials; there will be some medical breakthroughs; Australia will experience some sporting triumphs; there will be a growing interest in spiritual matters.

The fact that anybody with even a moderate grasp of current events, let alone someone who reads the news on ABC Radio, could predict all of

the above with a very good prospect of being correct, regardless of whether Uranus and Neptune were in conjunction or had eloped to seek fulfilment orbiting Barnard's Star, seemed to have escaped Mr Eaton's notice.

Forecasts of this sort are fatuous in the extreme and give no evidence that the forecaster has any esoteric knowledge at all. In the same time spot, on the same programme, three days earlier, I had in fact predicted very much the same scenario, distinguished from Mr Eaton's only by the fact that I did make definite predictions. Addressing the federal election in the first half of 1993 (mandated by Australian law, not by planetary orbits) I specifically predicted that it would be won by the ALP, by the Coalition parties and that it would not be won by the Natural Law Party. I guaranteed that two of these would prove to be correct.

At the conclusion of the interview, Mr Eaton made a plug for his business of 'corporate astrological advice'. He claimed that corporations in Australia and around the world are seeking this sort of advice all the time. I have no way of determining whether this claim is true, but if it is, it provides an excellent explanation of why the world is in one of the worst recessions on record. After all, would you buy shares in a company whose managers sought corporate astrological advice?

* * *

Shortly after writing the above story, I received a letter from Tony Jurgenson, a subscriber from Innisfail QLD, who had also heard the programme. Tony was so impressed by Mr Eaton's claims that

he wrote for further details, to discover that he could have a personal chart for \$75 and a corporate chart and report for \$100.

Those of us who cannot understand why the time of birth, rather than the time of conception, is crucial to the astrologer's weird view of the world, will be enlightened by the fact that the birth of a business dates from the Certificate of Incorporation.

We must check our Certificate to discover the star sign of Australian Skeptics.

* * *

Talking about elections, I feel a case of the Nostradamuses coming on. I herewith make yet another daring prediction which I guarantee without reservation.

The federal election will be won by the party whose campaign director has a four letter family name. Further, the second letter of the name will be 'o' and the third and fourth letters will be identical.

* * *

The following three stories are presented without comment.

The *Sydney Morning Herald* of February 3 reported on an inquest into the death in 1992 of a 34 year old woman who had been suffering from systemic lupus erythematosus, a potentially fatal, but controllable chronic illness.

She had been diagnosed in 1977 and had been successfully treated by a physician until 1990, when she joined a group called the Gospel Truth Fellowship in the belief that the sect could cure her disease. She was led to this belief by a neighbour who advised her that another woman had been cured of the disease by faith

healing. Evidence presented showed that the other woman had an entirely different disease.

Believing that her God would heal her, she ceased taking her medication, and consequently she died a lingering and painful death.

In deciding that the sect leadership could not be held responsible for her death, the State Coroner, Mr Glass, said it was a needless death, but said that it was her decision not to take her medication.

Following this, we heard of a woman dying in rural Victoria after having been subjected to an 'exorcism' to drive out 'demons' said to have possessed her. The media made a feast of this story, especially the claims made by her husband that she would be resurrected as her coffin was put into the grave. This hope was not realised. Police are said to be making a report to the coroner.

Bob Bruce, Queensland branch president, sent us a report of a further inquest into the death of a Gold Coast woman who had undergone a New Age 'rebirthing', technique. While teaching 'rebirthing' to a group of pregnant women, she had demonstrated how the technique allowed her to breathe underwater. A witness at the inquest said that after she had been underwater for 'ten or fifteen minutes', the group realised something was wrong. They were right - she had drowned. No one has been charged in this case.

* * *

Professor Ian Plimer, whose name is not unknown in these pages, has signed a contract with publishers Random House, for a book on the creationist push in Australia. In the non-provocative fashion, for which he is justly famous, he has titled his book, *Telling Lies for God*. The book should be published in the next couple of months and we hope to

have a review in the next edition.

* * *

We received a clipping about homeopathy from a reader recently, together with this riddle.

Q. What do you call an alternative healer who treats tinea?

A. A footpath.

Using entirely specious logic, he would not give his name because "you will make fun of it", signing his contribution RB.

We immediately checked our records and have to report that we do not have a subscriber named Roger Buttock.

* * *

Treasurer Dick Champion has asked us to thank all the subscribers who included a donation with their renewals, a request with which we are delighted to comply.

* * *

This issue is the first to be produced on our new Macintosh IIse analytical engine. While the old MacPlus served us well for many years, it, like the editor, was beginning to show its age and, unlike the editor, it has been pensioned off.

* * *

Australian Museum palaeontologist and Skeptics stalwart, Dr Alex Ritchie, has discovered one of the world's largest collections of fossilised fish near Canowindra in the central west of NSW.

The fossils, which he has dated to the Devonian period of 350 million years ago (or last Tuesday week if you are a creationist) represent at least four different species, including two rare species. Alex estimates that the deposit contains thousands of specimens, and that this may prove to be the most important palaeontological find in NSW this century.

He awaits with interest the spin that the creationist lobby will put on

his discovery, citing an article written by Dr Andrew Snelling on a previous discovery of fish fossils in the Somersby (NSW) area, in which he (Dr Snelling) claimed that those fish fossils were evidence for a world-wide flood. Alex says that the Canowindra find is a good example of fish trapped in a dried up pool and refers to cases he has seen recently of this phenomenon occurring in drying rivers in Queensland.

As the creationist sects claim that *everything* is evidence for their peculiar beliefs, we at *the Skeptic* would not be at all surprised by anything they said about this find.

* * *

Apropos Alex Ritchie, he has asked us to express his thanks to all those Skeptics who responded to his request (Vol 12, No 4) for donations of 'creatiana' to add to the Australian Museum's archives. He has received a great deal of material and guarantees it will be put to good use in his continuing activities to expose the fatuous claims of creation 'scientists' to the light of scientific reason.

* * *

It is sometimes the little things that give us pleasure.

On a recent visit to the scientific section of my local library, seeking details of some evolutionary point, I chanced across an obviously misplaced volume, "Evolution - Challenge of the Fossil Record" by one Duane Gish.

Fearing that the librarian must have been suffering from overwork, I thought to return the book to the fiction shelves where it belonged, however, on opening the book and checking the borrowing slip, I was delighted to find that while it had been donated in mid-1992 it had only been borrowed once since. **BW**

HEALTH

Kicking Against the Pricks

Stephen Basser

One of the commonest criticisms directed at scientific medicine by supporters and promoters of so-called 'alternative' medicine is a lack of consultation and co-operation.

This is often used as an effective ploy in trying to generate public support for unproven therapies. The alternative practitioner appears in public and expresses the view that he/she is genuinely interested in co-operation, and would be involved in more collaboration, if it were not for the close minded attitude of the 'orthodox' doctors and their exclusivist approach.

The generation of public support (and sympathy) is enhanced if a public appearance can be arranged with a representative of this supposedly closed minded fraternity. This unsuspecting individual will undoubtedly be asked to explain why they are refusing to engage in dialogue with the obviously caring, genuine, and persecuted alternative practitioner.

Once on the defensive, the options are limited and it is easy to see how the public comes to believe the myth about these poor Galileo's waiting for their breakthrough to surface in a sea of conservatism.

At the risk of being labelled a party pooper, I thought readers of *the Skeptic* would be interested in my own real life experience of attempted dialogue.

In late 1991 I formed the Australian Council on Science and Health (ACSH), a non-profit organisation whose primary objective is to provide health practitioners and the public with scientifically up-to-date and accurate information on health issues.

In July of this year the first draft of the ACSH's position paper on acupuncture was prepared and was sent out for review to a variety of individuals and organisations.

I felt it was important to receive critical comments from a diverse range of people including those who I imagined would disagree with the approach taken (western scientific perspective), and so sent the draft to the following groups:

- (1) Acupuncture Ethics and Standards Organisation
- (2) Australian Acupuncture College Inc.
- (3) Victorian Traditional Acupuncture Society, Pty. Ltd.
- (4) Australian Medical Acupuncture Society.

The initial reply I received from the Australian Acupuncture College Inc. was hand written, and is presented here in full:-

Dear Dr Basser.

The position paper you sent me reeks of the AUSTRALIAN SKEPTICS. Maxwell Smart could have constructed a better cover.

How would you and your fellow skeptics feel about a medical academic who, as a member of a senior scientific working party, funded by the Australian Tax Payer, misreported the findings of a Coronial Inquiry (not just in one report but in another after his misreporting had been pointed out to him) and distorted and misquoted the findings of scientific research (again in 2 reports). He must have thought that the people he was attempting to do a job on were "INTELLECTUALLY UNEDUCATED"

What a miscalculation! Would the Skeptics not be a little "SKEPTICAL" of this person's credibility and scientific integrity?

Wouldn't he be an embarrassment to THE SKEPTICS?

They might have to put out a report warning the Australian public to BE SKEPTICAL OF THE SKEPTICS.

**Yours sincerely,
Dr Kerry Watson,
Principal**

P.S. Give my regards to the INTELLECTUAL GIANT.

The only other reply I received was from the Acupuncture Ethics and Standards organisation who, in essence, asked for information so they could assess the credibility (in whose eyes, I wondered) of the ACSH. They were also bothered by my association with the Skeptics and like the acupuncture college did not provide a single specific response to the position paper.

The following is an extract of my reply to this group. I sent a similar letter to the acupuncture college.

I believe I was honest with you about the perspective that the draft acupuncture document was written from. That is why, in asking for your comments, I suggested a critical and comprehensive response.

It would be easy for me to interpret your letter as saying that if this draft document has any connection with the Skeptics, then you do not consider that it is worth a response. This would be a disappointment. Surely, if the aim was to release an unbalanced anti-acupuncture document, I would not have bothered to consult you at all?

One of the criticisms directed at 'orthodox' practitioners is that they have a dismissive attitude towards any therapeutic modality that is different to what they are familiar with - that they will not even consider an alternative viewpoint and refuse to engage in dialogue.

I have never attempted to hide the fact that I have been trained in a certain way or to deny that this gives me a certain perspective.

I believe that I have honestly communicated a willingness to challenge this perspective and to consider any issues on their merits.

I choose not to dismiss a person's views or ideas or thoughts merely because of who they are, or because they belong to a particular organisation, and I believe in responding to all inquiries with an honest reasoned reply.

Obviously you are free to choose to ignore my request for your input, but I cannot understand how such an action helps in furthering the dialogue process.

I received no reply from the Acupuncture Standards and Ethics Organisation.

Dr Kerry Watson sent me a copy of an article from the December 1990 Australian Journal of Acupuncture accompanied by a piece of paper with the handwritten message "WHERE IS YOUR CREDIBILITY?" written in orange highlighter pen. There was no accompanying letter and still no specific response to the draft paper. There has been nothing provided since then by any of the organisations.

I read the article that Dr Watson sent me, and in it I found the following passage:

The Working Party laid itself open to the very sort of criticism that supposedly followed from the adoption of a legal process by failing to invite traditional acupuncturists into an open debate in which they had the opportunity to hear and to endeavour to meet points advanced against them.

Well, let it be stated clearly, lest any of the mentioned

organisations attempts to use this very criticism once the final ACSH acupuncture paper is released (and it will be out by the time this is published) that they have been "invited into open debate", and have had the opportunity to "meet points advanced against them" and have declined.

I have presented in this article the only responses I received and I would be surprised, to say the least, if any readers of *the Skeptic* are able to interpret these as attempts at cooperative dialogue.

I am left to wonder who is behaving in a closed minded and dogmatic way in this case? Who is not prepared to venture away from their comfort zone? Who is unprepared to respond to valid questioning?

In view of such a response is it so unreasonable to question whether these organisations are in fact interested in the process of dialogue, or whether this is merely empty rhetoric designed to help in gaining public support?

The ACSH position paper on acupuncture will be published in future issues of *the Skeptic*, beginning with Vol 13, No 2.

Any reader who is interested in the paper before then may obtain a copy by sending a SSAE (at least 235x120mm or 9 1/4x4 3/4 inches) to P.O. Box 62, Heidelberg, VIC 3084.

Consumer information leaflets, suitable for patients and other lay readers are also available.

Critical comments or any questions about this are welcome!

The editors of *the Skeptic* welcome articles from our readers on subjects related to our aims and objectives. Ideally, these articles should be on a 3 1/4 inch floppy disc, in text format, although 5 1/4 inch discs are acceptable. A hard copy should accompany discs to ensure that we know where you wish to add emphasis. Articles can also be sent via e-mail to the address shown on page 4 of this issue. Typed articles are also welcome, providing not too many technical terms or foreign names are included. They drive the editor's secretary (who is also the editor) around the bend. Handwritten articles had better be good!

UFO was IPO*

Barry Williams

At 9 pm on Tuesday, November 24, the day after Vol 12, No 4 of *the Skeptic* was delivered to the printer, I received a phone call from a man who gave his name as 'Wayne'. He was calling by mobile phone from his car, while *en route* from the South Coast of NSW to Channel 10 in Sydney with a video tape which he claimed contained the "best ever evidence for a UFO". He was very excited and asked for details of the Australian Skeptics \$30 000 Challenge. He believed that the tape in his possession was worth 'millions of dollars' and wanted to visit me after he had concluded his business with Channel 10.

I asked him a number of questions and gained the information that the tape had been shot throughout the previous night (Monday 23 November). I explained that as it was late he should contact me at my office during the next day, so we could arrange a meeting where I could view his tape. I then called Keith Basterfield, a serious UFO investigator in Adelaide, to determine if any other reports had been made that day. He advised that there had been none.

The next morning, I arrived at my office at 8.00 am (the time I had advised Wayne I would be available), to be told by a colleague that he had called me at 7.30 "sounding excited". I then called him on his mobile phone and we arranged a meeting in a coffee shop, where I would view the tape in the viewfinder of his video camera.

When we met, Wayne and his colleague Terrence, seemed to be excited, talking about extraterrestrials and millions of dollars. On viewing the tape, I saw a bright light which jumped around violently in the frame, and which occasionally became enlarged as the zoom lens was used. In the brief shots of the magnified image the object appeared to be a disc with one or two dark excisions from its periphery. Due to poor viewing conditions of the camera playback, it was impossible to ascertain exactly what the object was, though I developed a very strong impression that I knew what I was seeing.

I advised Wayne to have the tape copied onto a VHS format cassette and to get a copy to me for serious study. He appeared to be quite concerned that Australian Skeptics would then be able to claim that the tape was ours and that we would be able to claim the 'millions'. I explained that, even if AS (or I) were to be so dishonest,

he had already shown the tape to someone at Channel 10, who could testify to his ownership and pointed out that if anyone else tried to breach his copyright, I could be a witness for him. I also suggested that his dreams of wealth might be a little exaggerated. He also seemed to be quite concerned that he would be harassed by 'authorities' who would try to cover-up the tape. He said that on the day after the sighting, he saw a light aircraft flying low over the ocean offshore from his home, a 'grey boat' sailing around the local inlet and a lot of people he had not seen before on the beach.

At this point, I questioned him as to his previous knowledge of the UFO phenomenon, whereupon he said that he had read a few magazines, among which was *Nexus*. Readers who are not familiar with this Queensland published journal should avail themselves of a fun read. It appears to be dedicated to the worldwide conspiracy view of everything from water fluoridation to UFOs, pyramid power and assorted 'New Age' fantasies. In its paranoia, *Nexus* almost makes the publications of the Creation Science Foundation look like models of scientific rationality.

I advised Wayne that most of what he had seen or read about UFOs, whether in the popular media, specialist magazines or in books, was likely to be utter rubbish and that he would have to search hard to find serious comment. I suggested that his excitement about what he had seen made him view the aircraft, boat and people, all perfectly normal and expected sights, as having a significance that was not warranted. I ascertained that he had taped the lights shown to me at about 9.30 Monday evening, that the object was to the west of him, that he had taped for about one hour, had then had dinner and some chat with a visitor and that he had later driven the visitor home. He then returned to his observations 'sometime after midnight' and had stayed up taping until 5.30am. In the later part of the night, he had recorded more tape of the object which had by then moved over the sea to the east of his property.

We then parted, with Wayne promising to get a copy of the tape to me and saying that he was going to put the original into a safe place. By this stage, I had formed a very strong suspicion of what was on the tape, but I decided to seek expert advice. I rang Prof Colin Keay,

president of the Hunter Region Skeptics, but more importantly in this context, a professional astronomer. I also contacted Dr Bob Stevens of the Victorian branch and Gary Dalrymple of the NSW branch, both of whom are keen amateur astronomers. The information they gave me confirmed my suspicions about certain astronomical phenomena, however, all of these could have proved to be useless when I viewed the tape.

That evening (Wednesday 25 November) I collected a copy of the tape, by now in VHS format and viewed it. On the larger screen the object was somewhat clearer than it appeared in the viewfinder. It constantly flipped in and out of shot and on occasion it appeared much larger, as the operator used the zoom lens. When in this enlarged condition, the object appeared like a disc with a bite out of it. The tape also had a sound track, which allowed me to hear Wayne's commentary as he continued taping. He was obviously excited, exclaiming at one point "Here, take me away. Take me to Mars". He complained that the light was bright and 'blinding my eyes' and he described various acrobatics being performed by the object. Also on the sound track could be heard the voices of "Cathy" (later ascertained to be Wayne's girlfriend), "Ivan" who sounded like an older man with a noticeable European accent, and later "Terrence" who I met with Wayne in Sydney. While Wayne was excitedly describing the manoeuvres of the object, it was clear from the comments of the others that they could see no such movement. On a number of occasions, Cathy said "It's hovering" and "You hear about UFOs hovering for a long time" while Wayne was talking about its movement. Cathy also said "It's in orbit. It will be going down behind the trees in a minute" and "It's a planet".

She was almost certainly correct as I have no doubt that I was seeing Venus which, because of its inferior (closer to the sun) position, is one of only two planets which is seen from Earth to have phases like the moon (the other is Mercury, which very few non-astronomers would ever have seen, or at least recognised). The reasons I am so sure are: it was at the right time to be Venus, it was in the right direction to be Venus, it showed a disc with a dark arc missing, as Venus does at this time and, perhaps most importantly, he made no mention of seeing Venus when he was photographing the object, although it should have been extremely prominent at the time. The 'aerobatics', I judged, were nothing more than the movement of a hand-held camera, magnified by the camera lens and the restricted field of view.

The only unexplained piece of the story, and the reason

why I contacted my astronomical advisors was, if Venus is seen in the evening sky, what was seen in the morning? Venus cannot be in two places at once, and if it is lagging the sun at night, it cannot be leading the sun in the morning. The answer I got was what I had surmised. The planet Jupiter was rising at about 2.30 am at that time and it is also very prominent in the sky. I did not see the later tape but am prepared to bet that the morning object had no 'missing arc' and was somewhat less bright.

I called Wayne on his mobile phone as he was returning to the South Coast. I told him of my conclusions: that he had witnessed two planets; that the 'manoeuvres' were artifacts of the camera movement; that the evidence of the other voices on the tape suggested that the other people had not been as excited as he had been and that he should not feel foolish as he was far from being the first person to have been convinced that Venus was a UFO. He did not seem inclined to believe me and I can understand why. He was too wedded to his belief for reasoned argument to dissuade him. I thought to suggest that he stop his car and look westward where he would see the same thing, however there was heavy cloud cover in the western sky. I did advise him that he didn't have to take my word for it, that he could contact an observatory or a university science department, but I doubt that he took my advice. I tried to ring him the next day, but his mobile phone was not operating. I tried again several times over the next two days, with the same result.

Then, on Friday evening (28 November) I attended a function in Epping. It was a clear night and the venue had a western aspect. At about 9.00pm, I walked to the front of the building and there saw an absorbing astronomical phenomenon. The crescent moon, its darkened part glowing faintly by Earthlight, was about to set to the west. About ten degrees higher in the sky appeared a large, brightly glowing, but very steady, Venus.

This was the first time that I have had direct contact with someone claiming to have sighted a UFO while the evidence was still fresh and it brought home to me something I had hitherto suspected and now had confirmed. Those who's ideas of the universe and the possibility of extraterrestrial life are coloured by the popularised junk served up on TV programmes, pulp UFO magazines, and sensational 'True Account' books, are ill equipped to make rational observations of natural phenomena. They are missing a lot.

(*Identified Planetary Object)

SUPERSTITION

Bad Medicine for Wildlife

Colin Groves

Why the rugged Russian Bear, the arm'd Rhinoceros and the Hyrcan Tiger have become Banquo's Ghost: the threat that paranormal beliefs are posing to the world's wildlife.

Twenty years ago, there were 60-70,000 Black Rhinoceroses in Africa. Today, there are about 3,000.

Ten years ago the American Black Bear and the Grizzly Bear were so numerous in some National Parks that there was serious debate whether some would have to be shot as they were becoming a nuisance, a very real threat to campers and hikers. Today they have to be closely guarded against poaching.

Two years ago, the Indian environment movement was planning a celebration of the twentieth anniversary of one of the world's most successful conservation programs, Project Tiger. This year there are fears that it may have to be turned into a wake.

What has gone wrong? Chinese medicine, that's what.

For hundreds of years rhinoceroses have been killed and their horns have been sent to China and Korea to be used for curing fevers and general aches and pains. The pressures began to build up in the last century, with the increase in the Chinese population and, especially, the establishment of overseas Chinese communities, and already by the Second World War the populations of the Indian, Javan and Sumatran species had been reduced to pathetic remnants. But somehow it was not until the 1970s that someone realised that there was a commercial potential in this; entrepreneurs organised African poaching gangs and armed them with Kalashnikovs, and the slaughter of African rhinos began. The Northern White Rhinos in Garamba National Park, Zaire, were reduced from a couple of thousand to fourteen. The Black Rhinoceros was wiped out in Cameroon, Chad, Sudan, Ethiopia, and Somalia; in Kenya a few remain only because they are guarded day and night behind electrified or barbed wire fences. For a long while Zimbabwe held the line, but the pressures have finally become too great there, the defences have crumbled, and rangers are frantically capturing the last rhinos and cutting their horns off to make them unattractive to poachers. Only Namibia and South Africa, which has both Black and Southern White rhinos, are still unbreached.

Of the eight different subspecies - local races, slightly different in their stripe patterns and other features - of tigers, three have gone for good: the Caspian (Macbeth's "Hyrcan tiger"), Javan and Bali tigers. The Sumatran and Indochinese tigers are just hanging on, the South China tiger is reduced to about 40 (half in the wild, half in zoos). There are still about 800 North China (or Siberian) tigers, but four-fifths of them are in zoos. Only the Indian tiger still numbers in the thousands - for the time being. Chinese medicine is catching up with them too, though.

There is not so much information about bears, just that every one of the seven species is under threat. From Chinese medicine. And the list goes on: the Musk Deer, the Snow Leopard, the Saiga Antelope, the famous Giant Panda itself...

Alright, so Chinese medicine is responsible for the depletion of much wildlife. But is it paranormal? Does it appeal to processes unknown to science?

Listen to the *Chinese Materia Medica* (Read, 1982): Hu Ku. Tiger Bones. The yellow ones from the males are best.... Acrid, slightly warming, nonpoisonous. For removing all kinds of evil influences and calming fright. For curing bad ulcers, and rat-bite sores. For rheumatic pain in the joints and muscles, and muscle cramps. For abdominal pain, typhoid fever, malaria and hydrophobia. Placed on the roof it can keep devils away and so cure nightmare... New born children should be bathed in it to prevent infection, convulsions, devil possession, scabies and boils... It strengthens the bones, cures chronic dysentery, prolapse of the anus... Jou. Tiger Flesh. For nausea, improves the vitality, and stops excessive salivation. For malaria. A talisman against 36 kinds of demons. A tonic to the stomach and spleen. Kao. Tiger Fat. For all kinds of vomiting. For dog bite wounds. Applied in the rectum for bleeding haemorrhoids. Melted and applied to scabby and bald headed conditions in children. Hsüeh. Tiger Blood. It builds up the constitution and strengthens the willpower.

And so it goes on: tiger's stomach, testes, bile, eyeball, nose, teeth, claws, skin, whiskers, faeces, and even the bone remnants in the faeces.

According to Jackson (1991), in the 1985-90 period

South Korea imported 1,700kg of tiger bones. As long ago as 1979 a brewery in Taiwan was importing 2,000 kg of tiger bones every year, from which are manufactured 100,000 bottles of tiger bone wine. When you realise that a tiger's skeleton weighs between 8 and 20 kg, you can calculate approximately how many tigers that represents.

In the case of bears the *Materia Medica* recommends the grease, meat, paw, spinal cord, blood and bones, but chiefly the gall, which is said to treat:

"epidemic fevers, jaundice... angina pectoris, ear and nose ulcers, and all evil sores. Antihelminthic. Infantile convulsions. Antipyretic. It clears the mind, quietens the liver, and clears the sight... For conjunctivitis, blindness in the newborn and various eye troubles. For caries".

And so to the rhino. Most of the readers of *the Skeptic* will be of European origin, and if there's one thing Westerners think they know about rhino horn is that the Chinese use it as an aphrodisiac. Well, they don't. They use it as medicine. Esmond Bradley Martin travelled throughout East and Southeast Asia, visiting pharmacies and talking to traditional practitioners as well as ordinary citizens; people were perfectly open and unembarrassed about their aphrodisiacs - they use tea infused with dried geckos or centipedes, antler velvet, seals' penis and testicles, serow horns, soup made from poisonous snakes, musk, and of course ginseng. In Burma and northern Thailand, rhino blood and, especially, urine. But not rhino horn.

The misunderstanding may have arisen, Martin thinks, because in parts of India, especially Gujarat, rhino horn is an aphrodisiac (though not an important one). Over the centuries, most of the traders in rhino horn encountered by Europeans would have been Gujaratis, who would probably have assumed that the Chinese and Koreans had the same use for it as they themselves did.

Martin found that the main value placed on rhino horn in Chinese medicine is as a fever-reducing drug. Any rhino horn will do, but the horns of Asian rhinos are smaller than those of African ones so their properties are thought to be more concentrated, "hotter". Pharmacists would explain to him how the Indian rhino lives in a seasonally dry, monsoonal climate, so its horn is good for dry fevers, whereas the Sumatran rhino lives in rain forest, so its horn treats wet fevers. Rhino hoofs would do at a pinch, but are weaker (Martin, 1980). Modern Chinese medical tracts say that rhino horn dispels heat, cools the blood, relieves convulsion and counteracts toxins; it is used to treat "fevers, influenza, poisoning, convulsion, epilepsy, restlessness, delirium, macular eruptions, erysipelas, malignant swelling,

abscess etc." (But et al., 1990).

Chinese medicine, though much beloved of New Age adherents who claim to have been validated by centuries of usage, rests on a totally nonscientific basis, indeed a paranormal basis, depending as it does on balancing eight "cardinals": yin, yang, outside, inside, empty, full, cold, hot. Rhino horn is a "cold" drug, hence suitable for "hot" diseases, especially when the heat is trapped in the two innermost components of the body, xue (blood) and ying (maintenance) (see But et al., 1990).

In Johor, a drug company makes "Three Legs brand Rhinoceros Horn Anti-fever Water", which, the label explains, is good for "malaria, high temperature fever affecting the heart and fore limbs, against climate giddiness, insanity, toothache etc.". In Korea, rhino horn is combined with other ingredients and made up into Chung Sim Hwan balls, which treat many ailments; they are readily available in South Korea, but not in the North, where people resent their unavailability. Even in Japan, home of the bullet train and the microchip, rhino horn is used to lower fever, cure measles, stop nosebleeds and alleviate blood poisoning (Martin & Ryan, 1990).

All this has been going on for very long time. In the *Shennong Bencao Jing* (literally the *Divine Plowman's Herbal*), written between 200 BC and 200 AD, rhino horn was recommended as a drug for intoxication and delirium (But et al., 1990).

Don't laugh, you long-nosed foreign devils. It was not so long ago that your own ancestors believed in this sort of thing. From ancient Greek times, rhino horn (mostly under the name unicorn horn) was sought after to make cups which would detect poison: poison poured into such a cup would froth and bubble and overflow. It was not until the late 18th century that the Swedish naturalist Carl Thunberg tested that one, and showed it to be utter rubbish. There's more. Thunberg noted that rhino horn shavings had been used in diseases too (especially, to cure convulsions in children). In 1590, Pope Gregory XIV lay dying; the tip of a rhino horn was cut off, ground down and administered to him in water. It didn't revive him. In 1846, one PW Hofland cited rhino horn's effectiveness against snakebite; you soak it in vinegar for 2 to 3 minutes and apply it to the wound. As late as 1911 Frau J Kloppenburg-Versteegh recommended pulverised rhino horn in cold water, heated and filtered, made and drunk fresh daily until the patient is well. These two little titbits are cited by Sody (1959).

Well, the amount of rhino horn coming onto the market has fallen in recent years. Of course, there are many fewer rhinos. Martin and Ryan (1990) did a rough calculation. Since 1970, an average of 3 Javan, 93 Sumatran and 43 Indian rhinos' horns have come onto

the market each year (recall that there are only about 60 Javan rhinos alive in the whole world. There are a maximum of 1,000 surviving Sumatran rhinos; there are nearly 2,000 Indian rhinos, but they are better guarded than the Sumatrans). In the 1970s, an average of 8 tonnes of rhino horn left Africa each year; this fell to 3 tonnes per year in the 1980s. Martin and Ryan calculate that this represents 4,350 White rhinos and between 74,240 and 93,800 Black rhinos. Asian rhinos' horns were, of course, still more expensive than Africans': in Chengdu, African rhino horn was on sale at US\$3,927 per kg, and Asian horn at \$24,200!

There is something else, too. Throughout the centuries there has been a craft of rhino horn carving in China: the horn is carved into vessels with intricate designs, and when polished its translucency gives it a particular beauty. Martin (1991) reports that antique rhino horn carvings are now being used to make up for the decline in the fresh item. In the Tong Ren Tang pharmaceutical factory in Beijing, which nowadays makes rhino horn medicines almost exclusively for the overseas Chinese market, the storerooms contain not only fresh rhino horn but bags full of antique carvings - a profusion of plates, cups, bowls, figurines, stolen or purchased from museums or private collectors, dating from the Ming and Ching periods.

Against the law? Of course it is; China and most of the other countries involved are signatories to the Convention on International Trade in Endangered Species (CITES), but still they come, the traders, to the factory to buy the medicines and export them...

To my knowledge, no-one has ever tested the properties ascribed to tiger bone wine or to bears' gall bladders. The claim that a substance keeps demons at bay might be a little hard to test, at that. But rhino horn has been tested. Hoffmann-La Roche, for example, administered rhino horn to rabbits whose temperature had been raised by *E.coli*; there was no effect. But et al. (1990) objected that a fever caused by *E.coli* is too transient, so they injected rats with turpentine oil, then administered aqueous extract of rhino, cattle, buffalo and saiga antelope horn to different groups. At 5g/ml and 2.5g/ml, rhino horn induced a reduction of 0.8° in body temperature within 30 minutes; the reduction lasted an hour and a half, and was then boosted by a second injection; the reduction was less at 1g/ml, and absent at 0.5g/ml. Cattle and buffalo horn showed a lesser effect, but saiga horn gave a greater effect, and more quickly. Before we gasp, "so it *does* work, and award Dr But and his colleagues the A\$30,000 reward for demonstration of a paranormal phenomenon, let us recall that, as they admit, 5g/ml would be equivalent to more than one

hundred times the normal oral dose given to human patients.

In a follow-up study, But et al. (1991) used the Qingying Decoction (first mentioned in a 1798 herbal), which combines rhino horn with herbal products, and found that the horn plus herbs, *or the herbs alone*, gave a bigger reduction than the horn alone. A combination in which domestic buffalo horn was substituted for rhino horn worked just as well. From all this, the authors suggest that saiga or buffalo horn could be used instead of rhino horn; preferably buffalo, as these animals are domestic in their millions throughout eastern and southern Asia, whereas saiga is itself a rather vulnerable species. Maybe; but I am not convinced.

Rhino horn, like other horns, and indeed like hoofs and even fingernails, consists of keratin fibres containing amino acids, guanidine derivatives, sterols, ethanolamine, acidic peptide, sugar and phosphorus compounds, and trace elements. It differs somewhat from cattle horn, especially in its higher concentration of calcium, but buffalo and saiga horn have almost identical composition. Given this chemistry, it seems very unlikely that the very slight effect on rats, at fantastically high dosage, was due to any more than an effect of calcium or perhaps protein, and it cannot be ruled out, either, that some peculiarity of rats' biochemistry, or the means of its administration (by injection rather than orally), is involved. It seems high time to perform the test on human subjects. Take forty fever patients, all of them believers in the rhino horn cure. Give ten a rhino horn decoction, ten buffalo horn, ten aspirin in water, ten a placebo.

Do It Double-Blind.

Of course, by the time such a test can be organised, rhinos may be extinct.

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CREATIONISM

Which Genesis?

John McKeon

There are two creation stories in the first book of the Bible. These stories contradict each other at several points in the sequence of creation events and in general they are quite incompatible with each other. It hardly needs saying then that the opening chapters of *Genesis* are not an infallible record of the beginning of the world.

Why should an essay on the *Genesis* creation stories appear in the pages of *the Skeptic*? I think there are two good reasons.

Firstly, while some creationists (e.g. the members of the Creation Science Foundation [CSF]) make a farcical pretence of presenting scientific arguments to church-going folk in favour of a six day creation, they also make no secret of their belief that the Bible, and therefore *Genesis*, is infallible. This belief is just as open to criticism from the point of view of a healthy scepticism as do their pseudoscientific claims.

Secondly, the Bible comes in many English versions and, with respect to the *Genesis* creation stories, it is important to be aware of which version creationists might fancy as the one best suited to their interests at any time. Here I will take a punt and suggest that the New International Version (NIV) is a likely candidate.

The NIV presents the creation stories from the point of view that they are an ‘infallibly accurate record’ of the beginning of the world. I shall argue that the NIV rendering of *Genesis* 2 is confusing and clumsy, reflecting the adverse effects of the translator’s commitment to the ideology of biblical infallibility. The clumsiness is a result of the attempt to harmonise the second story (S 2) with the first story (S 1) during the process of translating from Hebrew into English.

By contrast, the New Revised Standard Version (nRSV), like its predecessors, the Revised Standard Version (RSV) and the King James Authorised Version (AV), does not try to harmonise the two stories. The internal integrity of S 2 is preserved. In order therefore to illustrate how the NIV errs in its presentation of the S 2, it is useful first to dwell on the points at which the two stories differ from each other, using the nRSV as a

reference.

The S 1 is grand and comprehensive, depicting the creation of the world in six days, it is crowned by the creation of humanity last of all on the sixth day and the observation of the seventh day as God’s day of rest. The story is a meditation on the custom of resting from work on every seventh day, as suggested by its final verse (*Gen* 2.3):

So God blessed the seventh day and hallowed it ...
(nRSV)

The S 2 covers a day or an indefinite period in which the first living thing to be formed is a man and the last is a woman. This story is a meditation on human sexual bonding, as suggested by its closing verse (*Gen* 2.24):

Therefore a man leaves his father and his mother and clings to his wife, and they become one flesh.
(nRSV)

The following paragraphs discuss some of the significant differences between these stories. All quotations are from *Genesis* in nRSV.

Flood or Drought?

The S 1 pictures the earth being created in the midst of waters, apparently extending indefinitely in all directions:

And God said, “Let there be a dome in the midst of the waters...” (*Gen* 1.6)

The S 2 initially presents a barren earth without water:
...when no plant of the field was yet upon the earth and no herb of the field had yet sprung up - for the Lord God had not caused it to rain upon the earth... (*Gen* 2.5)

Drought is not a problem in the S 1. After establishing dry land from the chaos of apparently endless waters, God simply bids the earth to bring forth vegetation. In the S 2, water is in short supply. Instead of commanding the earth to put forth vegetation, God plants a garden at a place where water is available from a river.

Vegetation

According to *Genesis* 1.12,13:

The earth brought forth vegetation: plants yielding seed of every kind, and trees of every kind bearing fruit with seed in it ... on ...the third day.

And according to *Genesis 1.27,31*

...God created humankind... on... the sixth day.

Clearly, according to this story, all vegetation is created before the appearance of humans. But, in the S 2, a man is the first living thing to be created:

...when no plant of the field was yet in the earth and no herb of the field had yet sprung up-...then the Lord God formed man from the dust of the ground... (Gen 2.5,7)

Then *Genesis 2.8.9* continues:

And the Lord God planted a garden in Eden, in the east; and there he put the man whom he had formed Out of the ground the Lord God made to grow every tree that is pleasant to the sight and good for food...

Here, God is certainly busy creating plants after creating the first man. It is impossible to reconcile the events of the S 1 with those of the first. Note also how God in the S 1 simply bids the earth to *put forth vegetation*, but in the second he **plants** a garden and **makes** trees grow. The style and vocabulary of the stories is very different. As a further example, note the expression *plants yielding seed*, which means grain crops. In the S 2, a grain crop is described as a *herb of the field*.

Food

In S 1 (*Gen 1.29*) God instructs humanity, male and female, about food:

See, I have given you every plant yielding seed that is upon the face of the all the earth, and every tree with seed in its fruit.

S 2 also has a scene where God instructs about food, but his pupil is the man alone, before the woman is created:

You may freely eat of every tree of the garden; but of the tree of the knowledge of good and evil... (Gen 2.16,17)

Neither story displays any awareness of the other - not only are style and vocabulary different, but even the themes are different - all of this surely points to their separate origins from independent oral traditions.

Birds

In S 1, birds are associated with water and sea creatures (*Gen 1.21,22*):

...God created the great sea monsters and every living

creature that moves, of every kind, with which the waters swarm, and every winged bird of every kind ... on ...the fifth day.

This association is understandable when it is recognised that birds fly up in the sky, which was the dome beyond which *the waters that were above ... (Gen 1.7)* In S 2, birds were formed *out of the ground* along with *every animal of the field* (*Gen 2.19*). There is no reference to the sea, nor sea creatures, nor is there any awareness of chaotic waters held at bay by sky or dry land. Instead, S 2 treats water as the precious substance that allows plants to grow; and birds are formed *out of the ground*. A further contrast may be noted in the fact that S 2 associates the formation of birds with land animals, whereas S 1 sees the creation of birds (*Gen 1.21*) on the day **before** the creation of land animals and humanity (*Gen 1.24-31*).

Creatures

Note how S 1 has all the creatures appear before the creation of humankind, but S 2 has animals and birds created after the first man, in a sort of trial to see whether a companion can be found for him:

Then the Lord God said, "It is not good that the man should be alone; I will make him a helper as his partner. So out of the ground, the Lord God formed every animal of the field and every bird of the air..." (Gen 2.18,19)

Dominion

In S 1, (*Gen 1.28*), God bids the first human couple to *have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth*.

In S 2 (*Gen 2.20*) *the man gave names to all cattle, and to the birds of the air, and to every animal of the field*. The giving of a name is an act of dominion over that which is named. The man alone exercises dominion here, in contrast to S 1, where the first human couple do so.

Note how no awareness of sea creatures is displayed in this text:

...whatever the man called every living creature, that was its name..., yet every living creature in this story only consists of animals of the field and birds of the air (Gen 2.19).

The first account demonstrates a grand vision, whilst the second is confined to the cultural experience of farming and animal husbandry.

How then does the NIV present these texts? It appears that the translators were anxious to reconcile the most obvious of the contradictions from amongst those just cited in “Vegetation” and “Creatures” above. S 1 presents the sequence of appearances in creation as that of vegetation, then animals, then humanity. NIV *Genesis* 2.8 has been rendered in an attempt to preserve this sequence - after God forms the man out of the dust, the text continues (NIV *Gen* 2.8):

Now the Lord God had planted a garden...

Compare this with nRSV *Gen* 2.8

And the Lord God planted a garden...

The differences between the translations may rest on ambiguities of grammar and word meanings, but the overall effect of the NIV interpretation is to create a ‘flashback’ sentence which alludes to *Genesis* 1.12,13. Does this allusion succeed? Does the apparently conflicting sequence of events melt away under inspiration of a superior translation? The NIV text continues (*Gen* 2.8,9):

...and there he put the man he had formed. And the Lord God made all kinds of trees grow out of the ground...

Here now is continuing creation of vegetation by God, contradicting S 1, in which creation of vegetation is confined to day three, whilst day six is reserved for the first appearance of land animals and humanity. S 1 says nothing about vegetation being made, created or coming forth on the sixth day, after humanity is created, or on any other day other than the third.

The allusion of NIV *Genesis* 2.8 to S 1 introduces confusion for the careful reader. S 2 begins with a scene of desolation - no vegetation, no rain and the creation of a man from dust, as if to emphasise the initial lack of water. There is no hint here of any appearance either of gardens or of animals before the creation of this man. The allusion to S 1 is simply clumsy; it fails to harmonise S 2 with S 1 and, moreover it destroys the integrity of S 2.

But more damage is yet to come. Consider now NIV *Genesis* 2.18,19:

The Lord God said, “It is not good for the man to be alone. I will make a helper suitable for him.

*Now the Lord god **had** formed out of the ground all the beasts of the field and all the birds of the air. He brought them to the man...*

Compare this with nRSV *Gen* 2.18,19:

Then the Lord God said, “It is not good that the man

*is alone; I will make him a helper as his partner. So out of the ground the Lord God **formed** every animal of the field and every bird of the air, and he brought them to the man...*

The NIV again alludes in ‘flashback’ to the sequence of events in S 1. As a consequence, the NIV text implies that, after God resolves to make a helper for the man, he hesitates, recalling that there are animals and birds already in existence who might serve as helpers for the man.

This hesitation or second thought is not credible. The creation of animals of the field and birds of the air could hardly be a forgettable event, especially for an omniscient God. The text does not say, nor imply, that God overlooked these creatures when he noticed the first man’s loneliness. The man was alone because he was the first creature to exist. This is the plain meaning of the text of the story which begins at *Genesis* 2.4. God has made the man and then planted a garden for him. He then notes his loneliness and resolves to make for him a helper as his partner. There is no second thought nor reflection. The nRSV text flows naturally on from here to report that God immediately does what he resolves to do - to make a helper.

If there is any hesitation in the story, it is contained in the suspense and humour of what follows - God forms, out of the ground, animals of the field and birds of the air, just as he had formed the man earlier. But the man does not find a helper from among his new fellow creatures made of earth. Indeed, finally, his helper is formed out of his own flesh. In his joy, the man exclaims *at last* (nRSV *Gen* 2.23).

The NIV translation of *Genesis* 2.19 may be permissible on strictly grammatical technicalities, but the overall text in which it is embedded is ignored as a result. Here, as above with *Genesis* 2.8, the surrounding text is ignored because of the blind fidelity of the translators, not to the text itself, but to an ideology which says, in effect, that the Bible must be infallible, that none of its statements can be questioned with regard to their factuality, that the accounts of beginnings are historical and beyond doubt.

There is a delightful irony in the thought that people who might be regarded as ‘conservative’ Christians have taken liberties with the opening texts of the Hebrew Bible. ■

ENERGY

Radionics! Good for Everything

Harry Edwards

According to the *Encyclopedia of Occultism and Psychology* (2nd Ed), Radionics is the instrumental detection of vital energy patterns and associated diagnosis and therapy. In radionic theory, all living things radiate an electromagnetic field which has different characteristics in health and disease conditions. Energy patterns are given a numerical value or “rate”, usually calibrated on the dials of a diagnostic apparatus called a Black Box.

The original Black Box, sometimes called the ERA or Ocilloclast, was the invention of Dr Albert Abrams, AM, MD, LID, FRMS, a San Francisco physician. Abrams graduated in medicine from the University of Heidelberg in 1882 and with post graduate courses in London, Berlin, Vienna and Paris set out on what promised to be a distinguished career. He was Professor of Pathology at the Cooper Medical College, became President of the Emanuel Polyclinic in San Francisco, Consulting Physician, diseases of the chest, Mt Zion and French Hospitals, San Francisco, and made significant medical contributions which established his national reputation.

In the years shortly after the turn of the century, Abrams became increasingly more eccentric, devoting his time to the Electronic Reactions of Abrams (ERA), changes in electronic vibrations measurable at the skin surface by which he claimed he could diagnose and cure disease. He developed and sold expensive apparatus for measuring the ERA, including the “Ocilloclast”, the “Electrobioscope” and the “Biodynamometer”, travelling extensively giving clinical courses in his theory of “spondylotherapy” for a substantial fee.

Among the claims made by Abrams for his instruments were long distance diagnoses which he could perform on a drop of blood, tissue or even the patient’s handwriting! Some were patently absurd - as for example, the determination of a patient’s sex, race, religion and financial standing.

Dr Abrams’ black boxes were the subject of numerous investigations by the sceptical. Nobel prizewinner in physics and head of the California Institute of Technology Professor R A Millikan, examined the Abram apparatus and issued a statement to the effect that not only did the

apparatus not rest on any sort of scientific foundation, but from the standpoint of physics were the height of absurdity. Professor Millikan pointed out that the Abrams followers insert electronic resistance into a circuit which cannot oscillate at all, and therefore has no vibratory frequency.

Other physicists and engineers opened and investigated the devices and found them to be essentially a jungle of electric wires, violating all the sound rules of electronic construction.

The above notwithstanding, by 1923 there were more than 3,500 practitioners in the USA alone who had found that push button therapy was clean, quick and painless, and free from the prejudices and inadequate knowledge of flesh and blood doctors. Thousands of Abrams’ patients were diagnosed and cured of “bovine syphilis”, the etiology or even the existence of which was never demonstrated to the satisfaction of the medical profession who concluded that the disease and cure were a product of Abrams’ imagination.

A blood sample from a healthy guinea-pig was diagnosed as general cancer and tuberculosis of the genito-urinary tract, another diagnosis of a drop of sheep’s blood came back as hereditary syphilis with an offer of a cure for \$250!

In the same year both the *Journal of the American Medical Association* and *Scientific American* published reports on Abrams, furnishing convincing evidence of charlatany. When Abrams died in 1924 the AMA noted that he “easily ranked as the dean of all twentieth century charlatans”.

So much for the early history of radionics, which is now dead and buried? Isn’t it? No sir, not on your sweet Aunt Nellie. Like many other pseudoscientific inventions the gizmos have been resurrected, so forget all you ever learned about physics and biochemistry, burn your science books, tear down your institutes of learning, and put your academics out to pasture for we are on the threshold of an agricultural and medical revolution.

The following is an extract from an article on radionics that appeared in the *Australian Organic News* (April 1992), which takes a broad look at its aspects and the concept on which it is based. If you have a problem

comprehending the pseudoscientific confabulation don't despair, you are not alone!

"Firstly, there appears to be an infinite source of intelligent energy which provides us and everything in our universe with life force...To understand radionics, we need to study it under the premise that such an intelligent energy is the common thread which shapes and holds all form together and provides the medium for us to communicate with our thoughts, feelings and emotions and that each of us and everything have an individual energy pattern and energy emanations, which are an expression of that energy in all its variable forms. (Don't ask questions - believe!) For example, the transference of thought, by what is called telepathy, is an illustration of the ability to transfer thought, instantly (roll over Einstein!) and over great distances, and demonstrates that we are really tuning into an existing network that is everywhere, including this Earth and infinite space and has no need for the signal to take time to travel, as it merely exists. Once we have tuned into it, we are there. (Telecom and Optus shareholders are advised to seek further confirmation of the above before selling their shares!) Radionics is based on this principle and that everyone and everything has its own particular energy emanations and uses sensitive electronic equipment in conjunction with the sensitivity of the operator, to detect the presence and intensity of such emanations and, in the treatment mode, to transmit particular emanations, directly to the subject, over vast distances". (Anyone who talks to their pet rock and gets an answer would be advised to see a psychiatrist without further delay, but read on, you ain't heard nuthin' yet!)

We sometimes talk of people having good or bad vibes, these so called vibes are something which we "feel". This aspect is a practical example of what we are doing when we use radionic equipment for analysis. We are not measuring something which can be measured with an electrostatic or electromagnetic measuring device, we are measuring by "feeling" the presence and intensity". (There's the bottom line dudes, a "vibe" measuring device powered by imagination and, as the article goes on to reveal, with seemingly limitless applications).

With this brief look at what we are dealing with, let us now look at the practical aspects and how they can be of assistance to us. (Steady folks, here comes the big one!) In the U.S., U.K., and Europe, radionics equipment is being used extensively for the analysis and treatment of disease in humans and animals and in agriculture to assist in the

balancing and revitalizing of the soils and disease, insect, animal and weed control. (Now that's what you call versatile, but the simplicity of the operation is breathtaking). The analysis and treatment is carried out using an analyser/broadcaster, two tuning dials control the "rates" to find and/or determine and treat organs, elements, compounds, disease, feelings and emotions etc." (for a mere \$2793.00).

Various versions are being marketed in Australia by Biogan (Aust) located in Tweed Heads, NSW, the principals involved being the Researcher and President of the Agriculture Energizers Association, Mr TC Asbill, and Mr Frank Ireland, described in the association's brochure as "the BEST antenna designer in the world!"

The accompanying 38 page "How to Manual" (\$100.00 extra) lists the following that can be detected and treated by this wonder machine:-

AIDS, Blood Pressure (sic!), Bone Cancer, Cholesterol, Diabetes, Ear and Eye Problems, Fertility, Fibroid Tumor, Hair Loss, Headaches, High Blood Pressure (as distinct from ordinary Blood Pressure?), Lead Poisoning, Leukemia, Muscles (sic!), Parasites, Parkinson's Disease, Radiation Burns, Spine Problems, Undulant (sic!), and Weight and Habit Control. (Dandruff, warts and spelling are evidently beyond its capability!)

The operating instructions for this remarkably sophisticated device are extremely facile. No years of intensive study, no internship, no degrees required, in fact no training whatsoever. All you need to know about detecting and treating the above is covered in 12 pages. Fifteen pages however are devoted to auric, etherical and astral bodies, chakras and auras, astral projection (sic!), Killer Psychic Forces and Dowsing.

Another gizmo is the "Cosmic Pipe", a tube in the ground into which a little fertilizer such as rock phosphate is put, and which "reads" the vibrations and transmits them over the prescribed area thus eliminating the need to physically spread it. (Homoeopathic agriculture?!)

A further application of the Cosmic Pipe which should send pesticide manufacturers into a dither and is of particular interest to harassed housewives - those uninvited, nocturnal and voracious insects of the order *blattaria*.

"Place a sick or dying insect inside the Cosmic Pipe and the pipe will transmit the vibes of the dying insect and all the rest of that species within the range will get sick". (Sorry, it didn't say anything about creationists and pseudoscientists!)

It would probably suffice to dismiss the article and

the claims made therein as pure unadulterated drivel, concluding that anyone foolish enough to purchase what can only be termed expensive junk on the basis of this “evidence” deserves to be taken for a ride. However, as the aims of the Australian Skeptics include informing, alerting and cautioning those susceptible to uncritically accepting pseudoscientific claims, I am obliged to do so.

Radionics as defined by Abrams, now appears to have embraced the concept of “intelligent energy” also known as Mesmer’s Animal Magnetism, *Elan Vital*, Odic Force, Bioplasma and Bio-cosmic or Orgone Energy, terms that have been used across time and around the world to designate the fundamental life-force or energy that animates all living organisms.

Among the pioneers were the late Wilhelm Reich and Rudolph Steiner. Reich postulated that orgone energy is cosmic life energy, the fundamental creative life force known to people in touch with nature. It charges and radiates from all living and inanimate forms of matter and exists in a free form in the atmosphere. The U.S. Food and Drug Administration disagreed however, and sought and obtained in 1954, an injunction through the District Court, Portland, Maine, which ruled that orgone energy “does not exist”. Books and research journals bearing the word “orgone” were ordered destroyed as were the devices claiming to use the energy. Reich who died in Lewisburg Federal Penitentiary in 1957, is probably best remembered for his Orgone Energy Accumulator.

Radionics in relation to organic farming can be traced to Rudolf Steiner the founder of the Anthroposophical Society who, like the Theosophists, believed that there exists on another plane of consciousness a store of records of every deed, thought and event in human history. According to believers this astral databank, known as the Akashic records, can be tapped by psychics, mediums and clairvoyants. A book about to be published by a British scientist Percy Seymour of Plymouth University, argues the existence of ghosts based on this theory, that all matter in the universe leaves an indelible trace and it may be possible to tune into this image. (Homoeopathic apparitions?!)

Steiner, who was also an avid believer in the former existence of Atlantis, established Bio-Dynamic farming at his school of Spiritual Science in Dornach, Switzerland, early this century. In essence, the anthroposophist’s approach to Mother Earth is the same as their approach to the human body - a variation of homoeopathy, where the compounds are so diluted that

nothing material remains.

Although to scientists in a multiplicity of disciplines the word “energy” encapsulates a huge range of physical phenomena, there are only four fundamental forces of nature: the strong and the weak nuclear, electromagnetic and gravity, all of which are detectable and measurable. Pseudoscience however posits a fifth energy which in addition to being undetectable and unmeasurable by any method known to science, is also untenable. Because the lay person is unlikely to have more than a basic understanding of the word, pseudo-scientists achieve an aura of academic respectability by using it and other words borrowed from real physics.

Biogan (Aust) also markets THE SUPER EARTH ANTENNA designed by Messrs Asbill and Ireland which it is claimed,

“taps into the broadest spectrum of harmonic Cosmic and Subtle Energies which promote optimum health”.

To me it looks like a simple TV antenna but the proprietors claim that it is designed to reduce or eliminate the need for medication and synthetic chemicals and to achieve exciting results in Dairies, Poultry and Hog Houses, Hatcheries, Greenhouses and Fish Farms. (Personally I feel that a multi-tiered budgerigar perch or a clothes hoist for a bonsai garden in suburban Tokyo would be more apt!)

Going on to describe a “SUPER ENERGY UNIT” as the “latest technology in Subtle Energy”, the blurb says, “the Patent Pending system uses an external antenna which receives and transmits the Natural Cosmic Energies to the main units”.

This implies a detectable, measurable and harnessable supply of energy and raises a question. Other instruments advertised such as the A. E. GREEN MACHINE ANALYSER and the A.E. AUXILLIARY BROADCASTER are devices using a conventional power supply. Unless the sole purpose of the 12 volt DC supply is to illuminate a bulb indicating that the power is switched on, why would you need it?

Then we have a paradox, the PEN ARMOUR, “a multi-wave receiver that will receive the harmful radio and magnetic waves and redirect them away from the body”.

Although functioning as, though not described as a transceiver, we are now dealing with a known energy that can be both detected and re-transmitted so we are told, without either a conventional or metaphysical power source(whatever that might be)! The device appears to be the brainchild of Ward Penwarn, whose confidence

in his invention could be put to the test by inviting him to put his head in a microwave oven while wearing one! To use one of these devices to protect oneself against any form of radiation would be dicing with death.

A letter to Mr Penwarn asking whether any scientifically controlled testing had been carried out on any of Biogan's products remains unanswered, although an interested third party tells me that radionic devices have a fail safe type mechanism which makes it impossible to test objectively. The negative vibes of critical analysis are enough to affect the experiment! Enough said!

Conclusion

It is claimed that a fifth force unknown to science exists in nature and that it can be harnessed and re-directed for uses as diverse as medical diagnosis and treatment and for agricultural purposes. In the absence of any information to the contrary, or the suggestion that the devices contain some magical ingredient, it can be assumed that they contain conventional electrical and/or mechanical components and therefore there is no reason why, if a metaphysical force exists, it cannot be shown to exist. To suggest that "negative vibes" would prevent any form of analysis is fatuous and defies all logic. Further, no evidence or suggestion that controlled tests have been carried out to substantiate claims made on behalf of radionics has been presented.

Priced from \$468.00 to \$2793.00, the instruments generally, with their multiple dials, knobs and switches (but no quantifying indicators or meters) are reminiscent of the amateur radio rigs popular in the 1930s. What lies

behind the "handsome green and white" mounting panels is anybody's guess.

The putative worth of these devices is summed up (paradoxically) by the proprietor's own warranty and disclaimer:

the devices are guaranteed for one year against defects in materials and workmanship (sic!) but not theory. All the instruments are EXPERIMENTAL and are not intended to be used instead of other proven modalities!

Caveat emptor!

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The Great Australian Science Show

From time to time in *the Skeptic* we give free plugs to worthy organisations that we think support our efforts to encourage a rational and scientific view of the world.

In this issue, we would like to give a free promotion to the Australian Science Network, promoters of the series of Great Australian Science Shows. These exhibitions of scientific and technological products and concepts have proved to be very popular with the general public and we believe that they are valuable in promoting scientific understanding in our community.

In 1993, the Network has expanded its activities to four shows, including the first ever in Sydney.

The dates and venues are as follows:

Canberra, March 30-April 4, National Convention Centre.

Melbourne, June 23-27, Royal Exhibition Buildings (see the Australian Skeptics stand).

Sydney, September 21-26, Powerhouse Museum (the first Sydney show).

Brisbane, November 18-22, Brisbane Entertainment Centre.

They are fun, so why not go along and support science in your city?

For further details, contact Mike Pickford at ASN, PO Box 141 Flinders VIC 3929, Ph 059 890 970, Fax 059 890 993.

The Skeptical Student – 1992

William Grey

In 1991 William Grey devised a new course ‘Science and the Paranormal’, which was an introductory epistemology component for first-year philosophy at the University of New England. The 1991 end-of-year examination showed that the students’ grasp of the subject matter was not as secure as William would have liked—as extracts from that examination published in *the Skeptic* last year revealed.

The 1992 examination has also disclosed some misconceptions and misunderstandings, the more spectacular of which are detailed below.

‘Scepticism’ is derived from the Latin word ‘sceptikos’ which means to doubt. Scepticism is calling into doubt what it is reasonable to believe. The skeptics thought the world couldn’t possibly be round and that UFOs were figments of peoples imagination.

Sceptics deny the existence of extrasensory senses. They don’t believe that anything remotely “paranormal” is paranormal. The understanding of these events is outside the realm of human understanding. It is easier to not believe the unbelievable. One example is that an unidentified flying object (UFO) landed in my back yard. (I have a lucky charm in my bag for this exam.)

The paranormal community uses vast and varied methods for predicting the future. This is an indication of the difficulty of the job. William Grey demonstrated that his predictions were more accurate than those of professional philosophers.

Critical scepticism is where one keeps an open mind and tries to match the evidence to the belief. Selective sceptics are selective about what they are sceptical about. No amount of evidence can change their mind. Dogmatic scepticism is for more stubborn people. The Right to Life movement holds a dogmatically sceptical attitude to the abortion issue.

As the name suggests, ‘global scepticism’ derives from ‘globe’. Global scepticism is world-wide scepticism where a theory is rejected all over the world, or globally. Global scepticism is doubting everything. It is scepticism which encompasses a whole community and could even encompass an entire nation. Global scepticism is rare. It is an overriding attitude and possibly habit-forming. A global sceptic is sceptical about all religions but a

selective sceptic is only sceptical about Buddhism. Some global sceptics still believe that the Earth is still square and flat and not oval shaped.

One of Pluto’s students was a global sceptic. He would never say anything when there was a question about global scepticism. He would only raise a finger, and that, according to him, was the eternal truth.

Most miracles are similar to normal things. One of the difficulties for someone who thinks he or she has witnessed a miracle is to accept that the event is a contradiction in terms. Unfortunately it is the sceptic’s morbid job to question the miraculous.

Hume believed that even if a miracle occurred it would be more rational to believe that it didn’t. It is never rational to believe in miracles because evidence generally comes from unreliable sources, such as the testimony of people or a blind belief from eye witnesses. Maybe there was no evidence but only the word of historians. Hume thinks that it is not impossible, but irrational for a miracle to occur. Hume proposed several important standards for belief, such as evidence. All in all there is a lot going against their occurrence. Hume said man has a propensity to believe in the marvellous. I agree: it is one of the things that makes life enjoyable. To live totally by Humean theory would become very dull and droll.

One defect of science is that it does not take into account objects which do not exist. There is a possibility of proving the existence of psi phenomena, but it will always be critically scepticised.

Phrenology says a person’s behaviour is determined by the size of their brain. We can’t change our brain’s way of thinking except with physical force.

Anything that cannot be scientifically proven cannot be believed. Science is advancing every day, so one day a gypsy could look into a crystal ball and see your future. We have to ask: is this possible, and if not, how is it happening? Given that the event has been neither proven nor disproven it is difficult to let the matter drop.

Well, at this point we will let the matter drop. Watch this space, same time next year for a further installment—if the pedagogue survives the painful process of assessment. ■

REVIEW

Mythical Matters?

Alan Towsey

The Matter Myth, Paul Davies & John Gribbin Viking, London, 1991

*And that inverted Bowl we call the sky,
Whereunder crawling coop't we live and die,
Lift not thy hands for It for help - for It
Rolls impotently on as Thou and I.*

The Rubaiyat of Omar Khayyam (trans Fitzgerald)

It may seem an impertinence on the part of a layman, particularly one whose field of expertise lies mainly in languages and linguistics, to review a book on science, and a best-seller at that. But the book is, after all, aimed at laymen and the authors should, therefore, welcome a layman's reaction. I am further emboldened by a comment from Susan Stebbing, one-time Professor of Philosophy at London University, who wrote in her book *Philosophy and the Physicists* (first published in 1937, and which critically examined the theories of two prominent astrophysicists and popularisers of science of that period, Sir James Jeans [who, I believe, was originally a Quaker] and Sir Arthur Eddington - who also gets a guernsey in *this* book): "The physicist ... is entitled to instruct the layman on matters appertaining to physical science, but when he goes beyond its domain his arguments are not immune to criticism by the layman."

That said, this book is a good read, interesting and well written, and explains as clearly as is possible in lay terms those concepts of modern scientific thinking which most of us will have heard of but not fully understood: relativity, time, quantum mechanics, solitons, black holes, cosmic strings, wormholes in space, dark matter, superstrings, singularities and so on. For this, the authors are to be commended, and I am full of admiration for their wide-ranging knowledge and skills in exposition.

However, in drawing conclusions from their interpretation of these 'discoveries', although the text is liberally sprinkled with expressions like 'numerical experiment', 'theorists suspect that', 'there is speculation that', 'if not in reality, then at least in simulation, with the aid of mathematics', 'imaginary', 'it is possible that similar effects may actually be measured soon', 'difficult to see how it could be verified by observations', 'so long as there is no direct experimental confirmation of the validity of these ideas', 'a plausible explanation', 'it has been

suggested that', 'if they exist', 'not yet been detected', 'theoretical calculations', 'in standard theory', 'calculations suggest', 'most physicists believe that', and so on, the authors seem to me generally to gloss over the fact that the *real* existence of some of these 'discoveries' - black holes, cosmic strings, wormholes in space, superstrings, for example - has never actually been confirmed, in spite of some strongly suggestive phenomena which apparently fit in with current theory. And that is just the point - a lot of this is still only theory.

It appears that they have mostly been deduced 'mathematically' - but then the authors proceed confidently to describe their characteristics as if they really existed and we knew all about them. There are good examples of this - among many others - on page 235, where the 'properties' of gravitons ('hypothetical particles') are expounded, and on page 248, where "a new type of entity was *proposed*; the superstring. It soon became clear that superstrings have some remarkable properties." [emphasis mine]

Yet from all this, it is 'hypothesised' that the Universe 'may' have begun as a flash of 'virtual' energy out of nothing in a quantum vacuum, a flash which somehow finally lasted long enough to give rise to all that we are familiar with. (Incidentally, how does one measure a billionth of a second? How does one even register it?)

To my mind, this sort of 'evidence' is on a par with that for the paranormal - and just about as convincing. It is reminiscent of the paranormalist's favourite fall-back on 'forces unknown to science'. Indeed, in a recent review in the *Sydney Morning Herald* of 12 October 1992 of the film of Stephen Hawking's book *A Brief History of Time*, Robert Park, Professor of Physics at the University of Maryland, points out that "most physicists admit to having trouble with some ideas in *A Brief History of Time*" and that "this sort of talk ... panders to reincarnationists, crop-circle devotees and other fans of Great Unsolved Mysteries".

Now, I have had a deep distrust of theoretical mathematics ever since I read that Zeno the Greek, some 2,300 years ago, could prove mathematically that Achilles could never catch a tortoise in a race. This distrust increased even more when I read that early this

century two distinguished Polish mathematicians, Stephen Banach and Alfred Tarski, had shown mathematically that a pea can be divided into separate parts and rearranged so that they fill the Earth without leaving any spaces, and that the opposite is also true - the Earth can be divided up and re-arranged so that, without squeezing or distorting the parts, it could be reduced to the size of a pea. I understand that the mathematical reasoning in both cases is impeccable - but do you believe it?

Mathematics is, like words, a set of symbols, representing things in the real world - and sometimes only imaginary things, like dragons, unicorns, or the square root of minus 2, or 'infinite density' -convenient tools to make it easier to manipulate the things of the world in the mind. Now, I'm not decrying mathematics; it is most of the time a very useful tool indeed. But sometimes I think some mathematicians confuse the symbols with the things they stand for, and go overboard, as it were. (I note that a recent book, *The Mathematical Experience*, by PJ Davis and R Hersh, "raises serious questions about the nature of mathematics".)

Consequently, I have a distrust of 'mathematical models', 'thought experiments' and 'computer simulations'. The results of the latter depend, of course, on how the computer is programmed in the first place and on the data fed into it. Change either slightly and you may well get a vastly different result. And do scientists sometimes find from their experiments just what they *want* to find in terms of their theories? It has been known ... And how many other scientists check in detail the mathematical calculations that lead to these bizarre 'discoveries'?

The authors - and by implication also lots of other scientists - seem to me also to confuse unpredictability with randomness. An outcome is not necessarily random because it is unpredictable. A computer can be programmed to produce a 'random' series of numbers which are unpredictable - at first; I am told by computer buffs that if the series of numbers is long enough, it will repeat itself, and that the same sequence will be obtained every time the programme is run, and so ultimately becomes predictable.

My point is that to my mind none of the results of the experiments described in this book are really random, or undetermined. The authors admit that they can be predicted statistically - that is, on an average basis; you just can't predict *individual* outcomes. But if they were really random, you could never make even a statistical prediction at all - out of 10 000 occurrences, for example,

instead of the approximately 5 000 - 5 000 each time we normally get, you would now get 1 - 9 999, now 289 - 9 711, now 4 653 - 5 347 and so on, a different number each time the experiment was repeated, with perhaps occasional recurrences of the same number. I first saw this pointed out way back in the '30s, by AE Mander in *Clearer Thinking - Logic for Everyman*, and more recently by Professor Benjamin Gal-Or in *Cosmology, Physics and Philosophy. Causation or 'determinism'* must be still at work somewhere, even if we can't detect it.

And that brings me to another point: we have all read many times that, according to the Theory of Relativity, "the universe is finite but unbounded". As a linguist, this has always puzzled me, because I happen to know that 'finite' is simply Latin for 'bounded', so this is tantamount to saying that the universe is 'finite but infinite' or 'bounded but unbounded', which is meaningless. Just what are they trying to say?

In logic, when one comes to an obviously absurd conclusion, one goes back and checks both the premises and the line of reasoning, to find where one has gone wrong. But in science these days, apparently, one accepts it as a 'bizarre result' or as something having 'remarkable properties' - just as in religion it becomes a 'mystery'. See for example page 238, where "an embarrassing feature of the theory can ... be side-stepped by deftly dividing both sides of the relevant equation by an infinite amount". This, of course, results in "the theory (having) no predictive power". But the test of a theory *is* prediction.

My final criticism is the authors' use of the expression "the creation" of the universe (eg pp 114, 162). Now 'creation' implies a 'creator'. I don't want to get involved in an argument as to the existence or otherwise of God - that can't be proved either way - but it is not the province of science to invoke the supernatural or speculate on the existence of God or a 'Creator'. This has been pointed out many times. Science and theology are separate disciplines.

When I was a student, I read Sir James Jeans' book *The Mysterious Universe*, and summed up his final conclusions somewhat as follows: The only understandable explanation of the universe is in terms of mathematics. Mathematics is the purest form of thought. Therefore, the universe is a giant thought in the mind of a Great Architect. I thought to myself: "This can't be right. What is *explainable* by thought does not necessarily *consist* of thought. But I'm only a student and he's a great astronomer and physicist, so I must be

wrong somewhere.” But when later I read Professor Stebbing’s book mentioned above, I found that she summed up Jeans’ argument (in chapter two; the rest of the book is devoted to Eddington, who was more profound) pretty much as I had, and summarily dismissed it. She implied that physicists should stick to physics, and leave philosophy to the philosophers and theology to the theologians.

This is a view that should perhaps be heeded by Professor Davies, who, apparently from a religious background, has also written a book, *The Mind of God*, in which, in the words of the blurb, he “turns his razor-sharp mind to investigating a theological and scientific rationale for the creation of the universe”, arguing that “such a harmony of the spheres could only be conceived by a higher intelligence than man has yet fully grasped. Could this be our first true awareness of God?” Shades of Sir James Jeans... (Incidentally, so far no experiments or researches have been able to demonstrate the existence of ‘mind’ without a physical brain - see for example the special September, 1992, issue of *Scientific American*. If scientists wish to speculate on the beginning of the universe - if it ever had a beginning - let them use the word ‘beginning’, or ‘origin’, not a loaded word like ‘creation’.

(The other author, Dr Gribbin, is not exactly blameless, either. In 1973, while still an astrophysicist at Cambridge, he published, in collaboration with Dr Stephen Plagemann, a book called *The Jupiter Effect*, in which they predicted that the Earth would be racked by disastrous earthquakes and tidal waves on 10 March 1982, due to an unusual line-up of the planets. Readers may recall that none of their dire predictions came to pass.)

To sum up: my overall impression was that scientists really have no idea how the universe began - if it ever began - or of its ultimate structure, but they’re real strong on guesswork! Much of this book is nothing but wild speculation (the last chapter is a little more cautious), a mass of unproven theories, dressed up in ‘mathematics’, and then treated as if it were established fact. This is quite different from the concept of biological evolution, where the weight of the evidence (not mathematical!) from all areas puts the matter beyond all doubt. One is reminded of the confident descriptions of the “Great South Land” by ‘experts’ before it was actually discovered. If this is ‘21st century science’, Heaven (?) help us!

So, as a true Skeptic, I shall endeavour to keep an open mind until some *real* evidence turns up. In the meantime, the authors might ponder on old Omar...

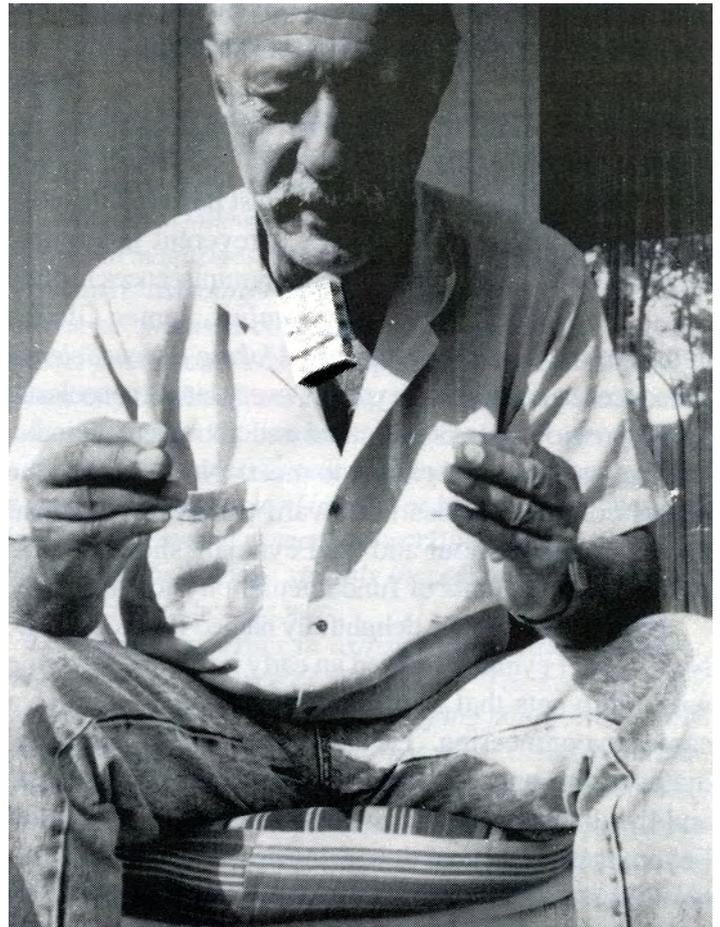
the Skeptic Levitaion

Competition

Everyone a Winner

The photograph purports to show Australian Skeptics Secretary, Harry Edwards levitating a matchbox. The photograph is genuine and has not been retouched, altered or tampered with in any way. Is this a case of psychokinesis or is there a rational explanation?

If so, how did he do it?



The first correct entry opened will receive a free copy of one of the publications listed under “Books” inside the back cover. Further prizes will be awarded to the most original and most humorous explanations. All entrants who enclose a participation fee of \$5 with their entry will receive free, gratis and without extra charge, a copy of *Creationism: Scientists Respond* (this is Harry’s idea, the rest of us reckon he has been hanging around with too many psychics). Winning entries will be published in the next issue.

To enter: Send your entry, name and address, together with an indication of your preferred prize to:

Levitation, Australian Skeptics
PO Box E324, St James, 2000.

REVIEW

Tribute to a Fine Man

Barry Williams

Genius: Richard Feynman and Modern Physics, James Gleick, Little, Brown and Company, 1992

The Character of Physical Law, Richard P Feynman, Penguin Books, 1992

Those who, like me, were entertained by the books *Surely You're Joking, Mr Feynman* and *What do you Care What Other People Think?* must have felt the need to know more about the quirky, irreverent theoretical physicist and Nobel laureate whose reminiscences formed the subject of the books. In *Genius*, James Gleick, author of the bestselling *Chaos: Making a New Science* introduces us to the real Feynman, every bit as iconoclastic as the previous books indicated and about as atypical a 'boffin' as one could expect to meet. Nevertheless, the Nobel committee does not award prizes for practical jokes or good humour and the Feynman shown here is one of the true giants of fundamental physical research.

Born in 1918, in the delightfully named Far Rockaway, New York, Feynman showed an early interest in tinkering with radio sets that seemed destined to lead him to a career in engineering. He also developed a passion for mathematics and it is this combination of the practical and the theoretical which seems to have set the seal on Feynman's method of doing physics, a method that set him apart from his contemporaries. Whereas most theoreticians seemed to opt for the rigours of the formal approach, Feynman remained convinced that everything, even the most esoteric domains of quantum mechanics, should remain 'visualisable'. He was that *rara avis* in science, a brilliant and intuitive theoretician with a large dose of pragmatism.

Graduating from MIT, Feynman began his doctoral work at Princeton, under the tutelage of John A Wheeler. Here he found himself among those of the second generation of atomic scientists, those who were to build on the foundations of fundamental research into matter laid during the first four decades of the 20th Century by Einstein, Planck, Bohr, Rutherford, Schroedinger, Heisenberg, Dirac, Pauli, Fermi and others. He developed the 'sum over histories' approach to quantum theory which stands as a major departure point for subsequent

research. While at Princeton, he was selected to become part of the Manhattan Project, the development of the atomic bomb. It was during this phase of his career, working among some of the finest scientific intellects of the United States and Europe, that Feynman began to be noticed by his peers. Robert Oppenheimer, in trying to recruit Feynman for his own university, described him as "the most brilliant young physicist at Los Alamos". A very young team leader, he developed practical computing methods using teams of individuals and the mechanical calculators, all that existed in the pre-electronic computer age, to speed up the tedious business of calculation involved in using a brand new view of the world to make a device, the like of which had never been previously imagined. He not only contributed theoretical insights to the project that led to its success but was often delegated to visit other parts of the project to ensure that everything came together on time. Remarkable achievements for a man well short of his thirtieth year.

After the war, Feynman spent some years at Cornell University, working with Hans Bethe and later became professor of physics at California Institute of Technology (Caltech), where he spent the remainder of his career.

Feynman did not read the literature, did not referee papers for publication, did not publish as much as he could have, did not supervise post graduate students, preferring instead to start from first principles and come to his own conclusions about problems, using his own methods, rather than to check out someone else's work. He despised bureaucracy and formalism, refusing to take part in departmental administration and budget sessions, he was contemptuous of philosophy as a subject, yet his own work is remarkable for the depth of its philosophy. He played bongo drums, learned how to decipher Mayan inscriptions, picked locks, worked in a biology laboratory and, strangely for a theoretician, did important experimental work on superfluidity and superconductivity.

He won the Nobel physics prize in 1965 for his theory of Quantum Electrodynamics and spent his prize money on a Mexican beach house. He developed the now ubiquitous 'Feynman Diagrams', indispensable tools for

theoretical physicists. His last public duty, before his untimely death from cancer in 1988, was as the technical expert on the Presidential Commission into the *Challenger* space shuttle disaster and it was Feynman who exposed the bureaucratic cover-ups which made the disaster an inevitability.

Like all good scientists, Feynman was a true sceptic. He believed “.. in an independence of moral belief from any particular theory of the machinery of the universe. An ethical system that depended in a watchful or vengeful God was unnecessarily fragile, prone to collapse when doubt began to undermine faith.” ; that “it was not certainty, but freedom from certainty that empowered people to make judgments about right and wrong; knowing that they could never be more than provisionally right, but able to act nonetheless.” His views on the UFO phenomenon: “I have argued flying saucers with lots of people. I was interested in this: they kept arguing that it is possible. And that’s true. It is possible. They do not appreciate that the problem is not to demonstrate whether it’s possible or not but whether it’s going on or not”. Or: “How could one evaluate miracle cures or astrological forecasts or telekinetic victories at the roulette wheel? By subjecting them to the scientific method. Look for people who recovered from leukemia without having prayed. Place a sheet of glass between the psychic and the roulette table. If it’s not a miracle, the scientific method will destroy it.” He had a technique of alerting students to the dangers of not understanding probability and chance “I had the most remarkable experience. On my way here today I saw licence plate ANZ 912. Calculate for me, please, the odds that of all the licence plates...” Feynman was ultimately a rational man.

Gleick canvasses the contentious issue of ‘genius’ and leaves the reader in no doubt that Richard Feynman possessed it, whatever it is, in full measure.

After his death, he was described by Freeman Dyson, a friend and no mean intellect himself, as “the most original mind of his generation”. In *Genius*, the author has meticulously researched his subject and leaves one wishing that one could have known this brilliant, creative and very human genius.

The Character of Physical Law is a reprint of the 1965 publication of some collected lectures given by Richard P Feynman to his students. They are remarkable for the clarity of their exposition of such difficult concepts as conservation laws, symmetry, probability and uncertainty as applied to fundamental nature.

Both of these books are highly recommended. ■

Not-so-new-age Complaint

Just in case anyone thinks that there is anything new about the New Age, this item should change their minds. Our thanks go to **Ben Bensley** of Normanhurst NSW, who brought to our attention the following letter which was published in *The Times* of June 11, 1942.

Sir,

The correspondence in your columns on astrology has drawn attention to a development in British life, the importance of which has hitherto been underestimated by the serious-minded.

It is not generally recognized that a very large section of the community is involved. In a detailed mass-observation study it was found that more people followed their daily fate in the stars than followed the advice of archbishops, preachers and parish magazines. In addition to the vast readership of newspaper astrology there are numerous specialized periodicals, privately-circulated “astrological news-letters”, booklet predictions, and envelope predictions available on almost any bookstall and selling in hundreds of thousands, and astrological “almanacs” (one version of which alone sells 3,000,000 copies annually). Something like four persons in ten have some degree of interest or belief in astrology, and this is highest among women and working-class people. Both interest and belief have steadily increased in recent years, and especially since the war.

The numerous errors in astrological prediction do not diminish the confidence of the faithful. The basis of mass astrology is favourable prediction of the future - constantly optimistic emphasis, the primrose way. Even when the prediction fails to come true, it has had its sedative soothing effect. This may have some value in keeping certain people calm and steady, but in the long run it must be dangerous to the war effort that people should be constantly lulled by complacency unrelated to reality. The astrologers played a big part before the war in assuring people that there was not going to be one, and their role nowadays is fundamentally the same. The astrologer, though generally sincere, is not tied by any of the traditional ethical responsibilities of the editor, parson, or politician. He may influence, even if only in small ways, millions of people, without having to take responsibility for the result, and up till now without much fear of contradiction or criticism. The revival of such ancient beliefs, and their growth into mass interests among the British public, is symptomatic of the wide decline in spirituality over the past decades. Surely the symptoms need to be diagnosed and dealt with? They cannot much longer be ignored.

Yours sincerely,

Tom Harrisson

Director of Mass Observation. ■

REVIEW

Analysis of a Cult

Colin Groves

Imperfect Company: Power and Control in an Australian Cult. By David Millikan. William Heinemann Australia in association with ABC. 1991. ISBN 0 85561 409 9 (paperback).

This is a remarkable book. It documents the rise and decline of a cult, known incongruously as Tinker Tailor, and examines the personalities and theology of its leaders.

At its height the cult numbered no more than 50; today, there are some dozen members. Does this make it unimportant? Millikan argues that it does not; it stands proxy for numberless small and not so small cults where someone claims absolute authority, unquestioned access to The Truth. That anyone at all, let alone intelligent “normal” people, should have accepted their claims, and the exploitation and total humiliation that went - and still goes - with cult membership, seems extraordinary. There are simply no easy answers why they should have done it. What the author does make clear, however, is that theology has little to do with their entrapment; many of the members have only the vaguest idea what the group’s theology actually is; they fervently want to be saved, and they believe with all their being that the cult’s leaders walk “in the spirit” or “in the light”, and that their only hope of achieving the same state of perfection is to submit wholly to their rule.

The degradation endured by the cult’s members is simply astounding. Not only do their earnings go wholly to the leaders, but they spend every waking hour working on the variety of mismanaged, doomed small businesses which the cult has been forever dreaming up. For these services they are made to endure sessions where they are hit, screamed at, and given an unendurable burden of guilt for being inadvertently and incomprehensibly “not in the spirit”. Some have cracked, and have run away. Others, the saddest ones (and this is where the full horror of it really hits home), have lost their health and even died because of it, some of them dragging themselves from their very deathbeds to work for the financial gain of the leaders, who have repaid this loyalty by not informing their relatives that they were dying,

and even giving excuses for not attending their funerals. On no more evidence than the leaders’ say-so, they believe that they will attain bliss in heaven by submitting themselves to hell on earth.

What of the leaders? The woman, Del Agnew, remains an enigma; the man, Lindsay Grant, somewhat less so. Millikan at one point finds himself calling them “evil”, at another point admits that this is too easy a judgement. Grant, at least, is totally sincere; his links to the Oxford Movement, the Inter Varsity Fellowship, the Evangelical Movement in general (all cults, however outlandish, do have some roots), having been broken bit by bit over the years, he is left with a philosophy, Perfectionism, which he delightedly discusses with David Millikan until it suddenly dawns on him that Millikan, so far from being a kindred spirit, is actually antagonistic. The philosophy itself has a history in Christian theology, but Grant is unaware of it: he is “unaware of the debate between Pelagius and Augustine in this area”, Millikan writes at one point.

This is a significant point; in his chapter on the leaders’ theology, the author draws attention to it, and I would like to extend his comments. In all my readings of, and dealings with creationists, I have been struck by their total ignorance of theological history. Their own theology is invented; often just made up, perhaps unconsciously, as they go along; as uninformed, as tinpot, as their “science”. They are completely oblivious that their ideas, far from being the new insights that they fondly imagine, have been brought up, debated and finally refuted time and again during the history of the Christian Church.

There are no pat answers to the enigma of how some people come to believe as they do, or how they can become so totally convinced that another individual has all the answers that they are prepared to hand over to that person their fortunes, their entire personalities, their whole lives. This book does not pretend to give any answers, but read it for at least some insight into the phenomenon, its shocking consequences, and the complexity of the evangelical, social, financial and, if I may use the word, satanic networks in which any such cult is invariably involved.

REVIEW

Lust among the Nebulae

Harry Edwards

Future Sex Stephen A Davis & Lyssa Royal, Tower Books. 1991.

This book is in two parts. The first part consists of channeller Lyssa Royal's conversations with extraterrestrials on the subject of their sexuality, mores and attitudes. Part II is a brief look at the history of sex and New Age premises.

The publishers claim that all of the indicators (without specifying them) point towards an imminent shift in the Earth's axis and an approaching cataclysm; what this has to do with sex is unclear. They also state that the book is "a pioneering text" destined to "earn its place in history" My conclusion after reading it was that the second claim was probably correct but not in the context intended by the publisher.

The introduction deals with premises, logic and assumptions, concluding that "we need someone who can reach beyond our currently accepted thinking and bring us something entirely new...thanks to the miracles of modern channelling...we are going to investigate the sexual attitudes and practices of some other races and cultures who no longer share the sexual premises we have on Earth"

The author's reasoning appears to be that we tend to accept assumptions as fact and that there is a need to start questioning these assumptions. Ironically, most of the book is based on unverified and unverifiable assumptions that the reader is expected to accept as fact, among them, that extraterrestrials exist and that it is possible to communicate with them by mental telepathy.

Chapter 1 posits the perennial argument about the probability of life as we know it on other yet undiscovered planets due to the vast numbers of galaxies in the universe. This probability is substantiated by the author's "gut feeling that we are not alone". A fair indication of the scientific validity of that which is to follow.

How do we communicate with these ETs? Spend millions of dollars on SETI? No need, enter stage right channel Lyssa Royal. According to her biography Lyssa has a BA. in Psychology from an un-named university in the USA and in 1979 witnessed an extraordinary UFO sighting near her home in New Hampshire. She channels

professionally before thousands internationally working mostly with extraterrestrial information. With credentials like that, shame on you doubters!

So how does she communicate with the aliens? By using her noodle of course. It's all so easy, anyone can do it, explains Stephen Davis with this confabulated analogy.

"When you turn a dial on a radio you're channelling, simply choosing what frequency you want the receiver to use to tune in the station you want to hear. If all you had was an AM radio you wouldn't be able to tune to an FM station, but that doesn't mean that it doesn't exist. The only difference between channelling and channelling with a capital C is that the frequencies being heard are considered to be from a source that exists on some level or dimension other than our own physical reality. Instead of a radio we are using a human being as a receiver (and although not mentioned, a transmitter) . That's all a channel does"

From a scientific standpoint this is a matter of faith, a so called vibrational plane is not testable. We are asked to believe, however, that Lyssa Royal communicates with ETs light years away by means of a transceiver in her noodle, powered by less than a microwatt of energy and no antenna to boot! You don't need to be a physicist or even have a rudimentary knowledge of radio theory to spot the flaws in this reasoning - the time it takes for a signal to travel through space (300,000 km/sec) rules out any possibility of the question and instant response type conversations in this book. But then one could not realistically expect the co-author, a former musical director who holds a BS. in Political Science from an un-named university in the USA to know that!

But for the hell of it let's assume that Lyssa Royal has succeeded where science has failed and is privy to information from advanced civilizations elsewhere in the universe- information of inestimable value to mankind such as can be deduced from some of the alleged conversations.

Interstellar Travel

"Sasha's parents from the Pleides have retired

and moved to Earth to an area near Nova Scotia”
 “Pleiadians have lungs but breath more oxygen...
 when we come to your planet it is more comfortable
 for us to be in a thinner atmosphere such as the
 Andes (sic)”

Doesn't say much for the cosmic IQ does it?

Communications

“Using only mind power, instantaneous,
 interference free intergalactic communication in
 colloquial English is possible.”; “There is another
 species on your planet
 (Earth) who has the
 same sentient
 consciousness as you
 do, perhaps you would
 enjoy talking to them.
 Who are they? Your
 dolphins!” (Referred to
 by Lyssa as ‘fish’.)

Medical knowledge

“Zetas come to Earth
 and experiment on
 humans”; “Pleiadians
 have no diseases”;
 “Zeta Reticuli’s I and II
 clone themselves and
 live on light
 frequencies”; “The
 average age of an Orian
 is 500 Earth years”;
 “Emotions can be
 genetically engineered”;
 “Aliens can take on
 human form and meld in
 un-noticed”.

Fascinating stuff what?

I am now waiting on a
 reply from the authors
 regarding the port of entry
 of the Pleiadian spacecraft
 bearing Sasha’s parents,
 whether they had any
 problems with the
 Canadian immigration
 authorities, and the name of the Pleiadian consul in Nova
 Scotia.

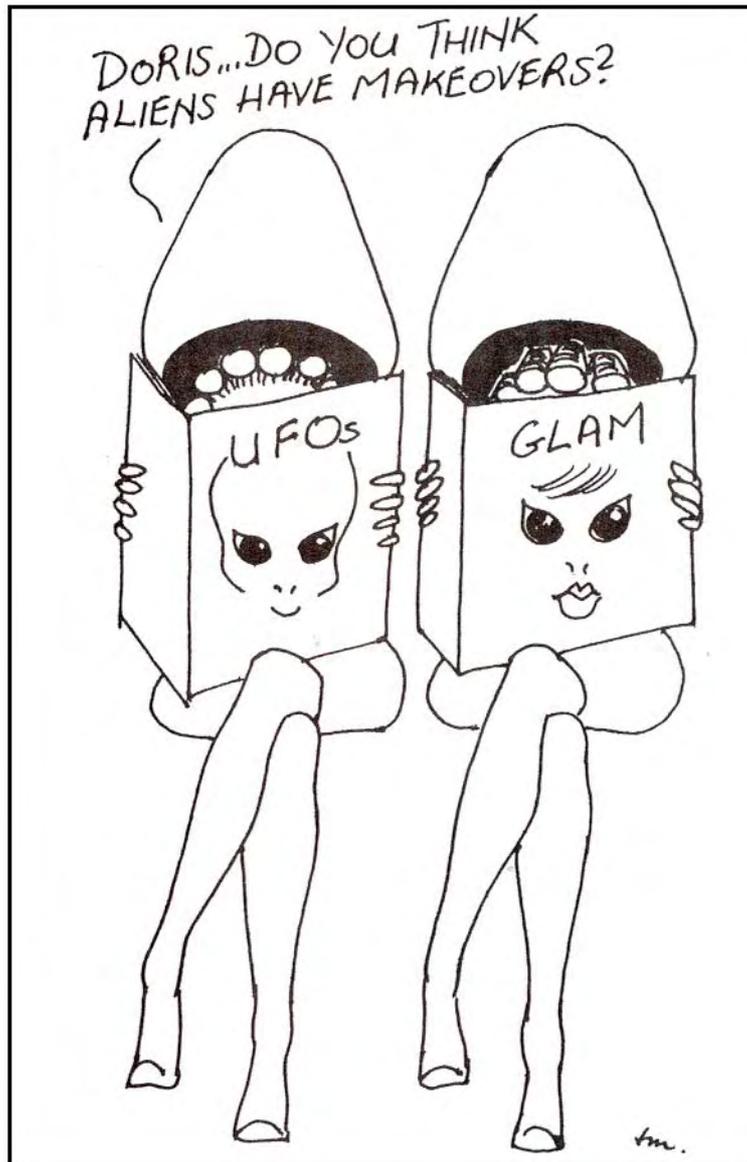
As has been pointed out in these pages before, it is a
 pity that the proponents of these fantastic flights of fancy
 did not avail themselves of a little astronomical
 knowledge before indulging in their nonsense. The stars
 of the Pleiades cluster are particularly inappropriate as
 the cradle of life, being young blue giants. Zeta
 Reticulans is a actually a pair of stars, unlikely to have

planets in stable orbits.

With the potential to advance man’s knowledge and
 benefit humanity why does Lyssa Royal denigrate her
 alleged facility and worth by co-authoring a book on the
 imagined sexual mores of extraterrestrials? One guess!

Ms Royal and Stephen Davis are known to Australian
 Skeptics, following their visit to Australia in 1981,
 chronicled in Sir Jim R Wallaby’s article, *Galactic J
 Curve Shock (the Skeptic, Vol 11, No 3)*. Speaking with
 the gallant baronet recently, he delivered himself of this

opinion regarding Ms
 Royal’s abilities as a
 channeller, “Of all the self-
 styled channellers I have
 had the misfortune to
 come across, Lyssa Royal
 was by far the least
 convincing, and that took
 some doing. The lecture I
 attended was about
 Pleiadian economics, a
 subject of jaw-aching
 dullness and treated with
 such infantile simple-
 mindedness as to make
 the pronouncements of
 our own terrestrial
 economists seem
 Einsteinian by contrast. I
 am pleased that she has
 written a book about
 extraterrestrial sex, which
 could not but be a distinct
 improvement in the
 titillation stakes.” Part II is
 more credible although
 very New Age oriented,
 and includes a semi-
 serious historical account
 of sexual attitudes.
 Whether this one chapter
 would justify the cost of
 \$17.95 is questionable.



Conclusion

The only support for Ms Royal’s extraterrestrial
 hypothesis is that her pronouncements certainly appear
 to be ‘off the planet’. This book is like Sophie Lee’s
 Let’s talk about Sex, but without the titillation! ■

Definitive Definitions of the Indefinable

Sir Jim R Wallaby

John Smyrk, computer consultant and former secretary of the NSW branch, has come up with an interesting idea which we pass to our readership for discussion. John would like us to compile an anthology of pseudoscientific and paranormal clichés, their accepted (by those who believe in such things) meanings together with definitions of what they really mean.

I will start the ball rolling with some of my favourites and invite our readers to contribute their own, which will be published in later issues. You can of course give your views on the ones included here. Let's start with an old favourite.

Energies Unknown to Science (EUTS)

Accepted meaning:

Subtle forces which permeate the ether/astral plane/spiritual dimension and which are connected to the life-force/universal spirit, and which, because they are located in the spiritual/metaphysical/psychic universe, are undetectable by the gross means employed by science.

Real meaning:

That which is proposed by believers to account for occurrences which conflict with, or are forbidden by, what is really known to science. That there is no good evidence that these occurrences really occur is not considered to be relevant by believers. As these EUTS are only known about because of their effects on human beings, who are controlled by energies *known* to science, then there must logically be some interface between the mystical and mundane planes which should therefore allow these energies to be detected by scientific methods. So far, there is no sign of this.

There may well be energies unknown to science, but it is unlikely that they will have anything to do with spoon bending.

The shyness effect

Accepted meaning:

The seriously inhibiting effect exerted on psi phenomena

by negative vibrations or thoughts emanating from sceptics.

Real Meaning:

The fact is that various paranormal phenomena do not appear to work when tested by rigorously controlled experiments and where the opportunities for cheating or self delusion are restricted.

A curious aspect of the shyness effect is that it only becomes apparent when the perpetrator of the paranormal phenomenon *knows* there is a sceptic present. As James Randi and others have shown, negative vibrations from covert or disguised sceptics do not seem to inhibit the performance.

They all laughed at Galileo

Accepted meaning:

'They' (the establishment) are close minded to new ideas and will not consider anything that may interfere with their cosy self-image and power. Just look at how Galileo/Einstein/Wegener etc were treated by 'them' when they proposed their revolutionary concepts. My new theory/demonstration/ invention is just as revolutionary, 'they' are persecuting me, therefore I must be right.

Real meaning:

Broadly, there are four categories of how new ideas are treated:

1. They are right and are accepted with little fuss after they have been confirmed. Most scientific discoveries fall into this category.

2. They are wrong, but are accepted. Usually this occurs when accepted theories, often reasonable ones in the light of current knowledge, are later overthrown by better evidence or more complete knowledge. The Biblical story of creation falls into this category, as does astrology. In some cases, factors other than evidence or knowledge are involved in this category, an obvious example being Trofim Lysenko, whose theories on plant genetics were politically correct (in the Stalinist USSR),

but scientifically untenable. This is not at all unusual with ideas that are mainly adopted for their political correctness.

3. They are right but are ignored. Alfred Wegener's theory of 'continental drift' is a good example of this. At first rejected, accumulating evidence over many years forced it to be accepted by other geologists. There are other examples, but it is not as commonplace as pseudoscientists would have us believe.

4. They are wrong and are ignored. This is by far the largest category - Australian Skeptics have files full of such ideas, as no doubt do many scientists. Sometimes, though rarely I would judge, the proposers are persecuted; more often they are ignored, which actually hurts the proponent more than persecution would.

Usually these ideas are postulated by people who have no particular skills in the fields into which they delve, though they may have expertise in others. Occasionally they attract bands of dedicated followers who frequently make even more dubious claims about the work than do the proposers. A prominent case of this type is Wilhelm Reich, who was indeed persecuted, and whose proposal of 'orgone' energy was a classic example of the EUTS mentioned above.

Most people who say "They all laughed at Galileo" fall into this category, though they would wish us to believe they fall into category 3.

To paraphrase the late Isaac Asimov, "to be a persecuted genius, you not only have to be persecuted, you also have to be right". In other words, the fact (or the perception) of persecution is no indication of the correctness of the idea. In the case of Galileo, he was not persecuted by other scientists (of whom there were few in his day), rather by the political and religious (in his case much the same thing) establishments. Galileo was right because he was right, not because he was persecuted. This is a counter example to that of Lysenko, where political correctness required Galileo to be wrong, regardless of the evidence. Other scientists soon took his ideas aboard and have continued to do so to this day and even the Catholic Church has seen fit, after 500 years, to forgive him. Incidentally, there is no historical evidence that anybody ever actually laughed at Galileo.

Not fully explained

Accepted meaning:

This is a serious mystery which science is unable or unwilling to explain, possibly through ignorance but more probably through malice or a conspiracy.

Real meaning:

1. This has been fully explained but the believers will not accept the explanation.

2. What on earth is there to explain?

3. There may be something here to explain but it is of such trivial moment as to not require much effort.

This phrase is frequently used by UFO nuts who like to cite the fact that, while some 97% of UFO sightings are accounted for by planets, aircraft, natural phenomena, hoaxes and misperceptions, there remain some 3% which are 'not fully explained'. This use of statistics can often be misleading, as many of the alleged 3% are covered by answers 2 and 3 above, or cannot be explained because there is insufficient evidence on which to base any explanation, while many of the 'best cases' presented by UFO believers actually fall within the 97% covered by answer 1. In some of these cases, especially where the overwhelming circumstantial evidence points to fraud, they cannot be 'fully' explained short of a confession by the perpetrator.

Sceptical UFO investigator Bob Sheaffer, who visited Australia some years ago, put this in perspective with the statement, "A lot of robberies in the USA remain unsolved but that doesn't mean that aliens committed them".

PSI missing

Accepted meaning:

A staple of the parapsychologists. Psychic or paranormal forces are subtle and difficult to pin down. When testing for an individual's ability to predict at a level better than chance, we also find some who consistently predict at a level worse than chance. This is significant.

Real meaning:

Psychic and paranormal forces, for which there is very little compelling evidence outside of the wishful thinking of parapsychologists, are tested for by large batteries of tests. Occasionally these seem to give marginally statistically significant results which are difficult to sort out from the noise around the chance level. If, however, we also add the cases where people are more consistently right to the cases where they are more consistently wrong, the significance looks to be greater. We can further refine this by rechecking the data after the event and add in all the cases where the subject missed by a small amount e.g. one either side of the correct answer, cases where the subject gave the correct answer to this test in another test and any other *post facto* pattern that we can find in

the results, the level of significance can be made to appear much greater.

Even if we were to accept that someone has demonstrated, in tightly controlled laboratory experiments, an ability to predict consistently at a level greater than chance, it would not support the claims of the various psychics who offer their services for a fee.

The levels of significance claimed by many parapsychologists do not differ from chance by all that much in the real world and one could hardly imagine a psychic advertising his skills as being slightly above chance levels. For example, if chance dictated a 20% correct response and if a psychic demonstrated a consistent 22% success rate, he might be demonstrating a very interesting ability, but you would still go broke very quickly by following his racing tips. And that is in the order of the success often claimed by parapsychologists.

There is a government conspiracy

Accepted meaning:

The government (any government) is controlled by powerful (satanic; extraterrestrial; occult; secret; Jewish; socialist; fascist; capitalist; [add you favourite here]) individuals who conspire to keep the truth about (UFOs, water fluoridation; the New World Order; the Protocols of the Elders of Zion; the Holocaust; free energy; [add your favourite here]) from the people. They will do anything to prevent this secret conspiracy from leaking out.

Real meaning:

The government (any government) is controlled by ordinary, fallible individuals like you and me. They particularly conspire to keep this knowledge from us. They also conspire to keep from us the fact that they have no idea how the country/state/municipality got into the mess it is in and even less idea how to get it out of it; how they have managed to squander the vast sums they are entrusted with on hare-brained projects with no lasting value; that governments (and most other large organisations) are hopelessly incompetent; and all manner of other things they would prefer the electorate not to know about.

This is not really a conspiracy, it is really politics. I suspect that governments are actually quite happy to have people focus on the more fanciful conspiracy theories as it distracts our attention from their real failings. When you think about it, if they really are as powerful and

sinister as the conspiracy theorists would have us believe, how come they allow so many people to propagate so many fantastic claims in books and the mass media?

“I used to be a sceptic”

Accepted meaning:

“I too was an unenlightened, close minded and negative individual like you. Then I underwent an experience/revelation that convinced me of the undoubted validity of (add your own paranormal category here). My life has been transformed for the better by the experience.”

Real meaning:

“I was an empty vessel, just waiting around for some crackpot idea to fill the vessel and to bring meaning to my boring existence.”

This is the universal claim of the chronic believer. It rarely varies, except in the case of the creationists who use the version, “I used to be an evolutionist”. Real scientists do not refer to themselves as evolutionists any more than they refer to themselves as relativitists or quantumites.

A true sceptic is always open to the possibility that any given paranormal or pseudoscientific speculation might be shown, by good evidence, to be an accurate picture of the world. Should this occur and should, say, the evidence for astrology become compelling, the sceptic will accept that, while remaining sceptical about other unbelievable things until such time as the evidence dictates otherwise.

The believer, on the other hand, is disposed to believe in any case. Prevailing circumstances are what cause one individual to become a creationist and another a UFOlogist. It is only the dogma associated with some beliefs which precludes the believer in one irrational hypothesis from believing in many others. The reason why the average creationist does not normally believe in new age claims is because he has been told they are evil, not because he has rationally determined that they are rubbish. And *vice*, of course, *versa*.

Now you have my thoughts on some of the more common statements or claims made by believers in irrational hypotheses. There are lots more that you will strike in your daily intercourse with the credulous and you are invited to submit them for publication.

There is just one final point I would like to commend to the attention of my fellow Skeptics. Be not afraid to confront your own prejudices. ■

NEWS

World Round-up

Harry Edwards

An occasional series, in which intrepid investigator Harry Edwards looks at stories appearing in overseas Skeptics publications.

If you are dismayed by the antics of our politicians and disillusioned with their policies, take heart, things could be worse - take India for example.

Mr Lok Nath Mishra is a registered homeopath, and since March 1992 has been governor of Assam. He has turned the sprawling Government House, overlooking the Brahmaputra River into a *tantric* (magic) hospital, offering his own version of faith healing, which he calls mantra (Hindu incantation) therapy, to thousands of people with ailments that have defied conventional doctors.

Mr Mishra, who says he learnt his mantra therapy from a *sadhu* (Holy man) in Manali 35 years ago, claims he knows about 10,000 mantras which can cure everything, be it gastritis, arthritis, snake bite, cancer or acute paralysis. It is not even necessary for the patient to be physically present, Mr Mishra can effect a cure simply by talking to the patient over the telephone.

The tantric hospital is also apparently all set to become the country's latest Indian Institute of Technology (ITT), promised under the Assam Accord of 1985. On July 4, 1992, Prime Minister PV Narashima Rao laid the foundation stone on the Raj Bhavan lawns, more than 20 km from the actual project site at Sila Grant in north Guwahti. The official reason for holding the ceremony on the Bhavan lawns was that the project site was flooded. The real reason was fear of demonstrations by people dispossessed of their lands for the ITT complex.

* * *

President Shankar Dayal Sharma has such great faith in Lord Balaii that he visits the Tirupati shrine several times a year. At Tirupati, the 72 year old Sharma rises at 4 am and insists on doing the *angapradhakshina* (an ancient purification ritual). Bare-chested and in a wet *Dhoti* (sarong pulled up between the legs) he rolls himself over a 700 metre circular path near the *sanctum sanctorum* twice. Doctors in a tent stand close by while Sharma performs this rigorous feat.

Immediately after this, Sharma's blood pressure is taken and he is massaged with a towel to restore circulation.

Perhaps the various Australian governments could profit from following these ideas. Imagine NSW Minister for Roads, Wal Murray, rolling through the bush at 1400 metres per day, pioneering new highways - the introduction of a cost cutting Medi-mantra-care system whereby all we need are dulcet monosyllables piped over the telephone, and how about converting Canberra's Parliament House into a temple to Tooheys, the froth and bubble god, where one could go for the purification ritual of *avagoodweegend!*

Our thanks to B Premanad, editor of *the Indian Skeptic* for these stories.

* * *

The writ of *the Skeptic* runs wide. We have subscribers in some of the more remote parts of Australia, including Thursday Island, Newman and Melbourne.

Overseas, we send the magazine to France, Germany, Japan, New Zealand, Spain, the UK, the USA, and Zimbabwe. Certainly our most remote subscriber, a new one this year, is a resident of the Outer Hebrides. Perhaps he may be able to enlighten us about the Scottish village of Fiunary, which has been mentioned a number of times in past issues.

* * *

One of the benefits of belonging to an international network of like minded groups is that we often receive journals from overseas organisations. One of the better produced of these is *La Alternativa Racional*, published by the Spanish skeptics group, Alternativa Racional a las Pseudociencias. *LAR* has reprinted a number of articles from *the Skeptic* and seems to cover similar ground to ours. I say seems to because no member of the National Committee reads Spanish. We also have a couple of issues of *El Ojo Esceptico*, published by the Argentine skeptics group.

If any of our readers would like to receive these issues, drop us a line and we will mail them. If there is more than one request, we will ask the first person to pass them on. ■

ART

Verse or Worse

Florence Ewings

No one has ever accused the editors of *the Skeptic* of having an artistic bent, however, we do feel that we should encourage those who do. This poem was sent to us by Florence Ewings of Cleveland, QLD, who sent the following letter with her contribution.

I based this poem on an actual happening that I read about some time ago. I can't remember whether it was a storm or a strike (or both) which caused such chagrin to the astrologers, but I smile whenever I think of it.

Although the subject matter is relevant to our magazine, I hesitated to send you my poem, having never seen such a thing as poetry in *the Skeptic*, but then again, why not? The articles in lighter vein by authors like Jim R. Wallaby, and the witty comments here and there provide a good balance to the more serious articles by the erudite professors and this is what makes *the Skeptic* so enjoyable to read. So here goes.

The Astrologers' Convention

A dedicated psychic, Joe made no apology
For organising his affairs around astrology.
Each day he'd scan the Star Guide page for signs that
were propitious
And it didn't faze him in the least when I called him
superstitious.
"Look, Joe" I said, "these myths come down from the
days of ignorance
When stars were thought to be like gods, exerting
influence
On us poor mortals here below, malevolent or benign
Forces shaping each one's life, according to his sign.
We're in the age of science now, when we reach a
conclusion
It's backed by facts and deep research - all else is just
delusion".
But Joe just smiled and shook his head. He said, "It's
my intention
To attend a special meeting soon - astrologer's
convention".

The seers, he said, had all conferred to set a time
auspicious
Consulting calendars and charts, they'd found a date
propitious.

The twelfth of June, they all agreed, (no-one unsure or
dubious)

A meeting called for 8pm could not be but salubrious.
When the night arrived and Joe set off, already rain was
falling

And quickly went from bad to worse - soon it was quite
appalling.

And then a mighty wind arose, and gusts of high velocity
Flung sheets of rain against the house with frightening
ferocity.

Trees were uprooted, roofs blew off, in the bay two boats
went under

And kids hid beneath the bed from the terrifying thunder.
The lightning struck a power pole with a deadly surge
of volts

(or else it was old Jupiter hurling his thunderbolts).

The power went off, the town blacked out, the trains
came to a standstill,

The frenzied people milled about like ants in an upturned
anthill.

It was so black you couldn't see your hand before your
face

And Joe gave up, because he simply couldn't find the
place!

Next day a headline in the news caught my amused
attention

"UNFORESEEN CIRCUMSTANCES CANCEL
SEERS' CONVENTION"

* * *

Well Florence, we published your poem (it is not the
first) and we will leave it to our erudite audience to decide
if it is art or whether you are channelling the late, great
Scottish bard, William McGonagall.

We liked the concept and were definitely not
influenced by the nice things you said about *the Skeptic*.

Alright, perhaps we were just a tiny bit influenced.
We are only human you know. Except for Harry. ■

PHILOSOPHY

Popper's Philosophy of Science

Rafe Champion

'Perhaps the greatest force causing the neglect and hatred of science has been the mistaken idea that science deals in inexorable and inhuman truths, in ideas that could, if necessary, be ground out by machines if only enough facts (gathered by other machines) were fed in. Perhaps the thing the world owes to Karl Popper is the death blow he has dealt to this naive, inductivist view of how science progresses. He also stated in terms that cannot be misunderstood that science is after all a human activity, dependent on human imagination to produce its hypotheses, absolutely incapable of describing the world absolutely, but setting itself merely the obligation of bouncing its ideas against reality. People are brought up to believe that to be successful in science you have first to have your right (imaginative) cerebral hemisphere obliterated; and the people (like a lot of teachers) who perpetrate this nonsense should be fried slowly in rancid yak fat'.

(Colin Tudge, in "Hating Science is Wrong", *New Scientist*, 7 April, 1983).

Introduction

William Grey has attracted some criticism from readers for allegedly being too friendly towards the philosophy of Karl Popper. We are advised to read David Stove as an antidote to Popper's subversive ideas. In fact William Grey had very little to say about Popper and some readers may wonder what he has done wrong. I suggest that Popper and his late friend William Bartley have provided the very best arguments that are available to support skeptics in the battle against prejudice and superstition.

It often seems that skeptics and fellow-travelling rationalists and freethinkers are engaged in a perpetual holding operation, building dams and levees to hold back the flood of unreason in particular areas where we concentrate our limited resources. Meanwhile other forms of superstition flourish and it is likely that the sum total of unreason in the world has not been diminished by the supposed triumphs of Science and Reason in the last century or two. If this is indeed the case, then it is easily explained because the dominant conceptions of Science and Reason have been defective. Popper and Bartley have corrected this situation and their

ideas have the capacity to drain the swamp of unreason and lower the general level of prejudice, instead of just holding it back in some places.

The Evolutionary Approach to Knowledge

Popper has helped to revive the evolutionary approach to knowledge. This approach, labelled 'evolutionary epistemology', was very popular last century but it disappeared when the methods of physics became the major concern of the philosophy of science.

Evolutionary epistemology applies the principle of natural selection to scientific theories and other forms of knowledge. It is concerned with problem-solving and error-elimination under various forms of selective pressure. In contrast, most schools of philosophy are concerned with the foundations of belief, the probability of theories, or merely exploring the meanings of words.

Popper started with the old idea that knowledge grows by trial and error, or in more learned terms, by conjecture and refutation. He extended this perspective using a four-stage problem-solving model to describe the evolution of life on earth, the growth of knowledge and the activities of organisms from the amoeba to Einstein.

P -> TS -> EE -> P.

The starting point is a problem situation confronting the organism; the second step is the production of tentative solutions and trial responses to the situation. The third stage is the process of error elimination, weeding out those among the tentative solutions that do not work. The fourth stage is the emergence of new problems or perhaps the reformulation of the original problem.

Popper's schema differs in an important way from the traditional "nature red in tooth and claw" picture of evolution in which the driving force was supposed to be the pressure of competition in the battle for survival. In Popper's model the progressive impetus does not come from the external pressure of the environment, instead it springs from the capacity of the organism to generate variations in form or behaviour, or, in the case of humans, to create ideas, including imaginative myths, stories, and scientific theories.

The “Observational Base” of Science

In science the error-elimination stage consists of critical discussion and experimental tests. Testing of course involves observations and the four-stage schema challenges the common view that scientific problem-solving begins with observation or the collection of data. This impression is heightened by the practice of shooting rockets into outer space to observe things (like the extra moons of Uranus) that have never been seen before. There is a tendency to think that if we collect enough information, true theories will emerge from them.

The giant Messel texts that form the basis of the secondary science course in NSW used to tell us the following (and may still do so):

‘Science advances in a definite pattern. First and foremost scientists must make observations. These observations must be careful and accurate; and the results of more and more observations accumulate’.

Apparently Messel is one of the people who Colin Tudge would like to have fried in rancid yak fat. It is painfully true that observations accumulate but the notion that this constitutes the growth of knowledge is false and dangerous. It is logically and psychologically impossible to make any observation without a point of view (about what to observe). As Darwin wrote in one of his letters “How odd it is that anyone should not see that all observation must be for or against some view if it is to be of any service”.

It is pointless and wasteful to do experimental work without explicit and self-conscious reference to the scientific problem situation and the state of the debate between rival theories. Attempts to achieve the “ideal procedure”, the “advance in a definite pattern” described in the Messel text would make the scientist repress their imaginative and critical faculties to the level of a Creation Scientist, or to a recording machine.

People who think that science consists of accumulated data are likely to be surprised when they find that just about all the evidence that scientists use to describe evolution can be used (in odd ways) to fit into the very different theories of Creation Scientists.

Another opening for Creation Scientists is provided by unsolved problems in the scientific account of evolution. Of course these do not challenge the basic idea of evolution, rather they concern details and mechanisms. People who think that science is a firm structure of authoritative knowledge become confused and worried when Creation Scientists reduce unwary scientists to embarrassment by pressing and probing at

open problems, often in areas where the scientists are not expert. Due to the vogue of over-specialisation many scientists are not equipped to handle a wide-ranging debate and Creationists have been able to exploit this.

The Importance of Unsolved Problems

It is important to explain that knowledge grows in response to unsolved problems or open problem situations. The problem-solving process starts with problems, with the realisation that we do not know everything. This realisation is supposed to be the beginning of wisdom; it is certainly the beginning of the process that leads to the growth of scientific knowledge. Open problems in evolutionary theory concern the detailed steps in parts of the evolutionary tree where fossil records are scanty, and the time-scale for some of the steps and stages in the sequence of forms. Other open problems concern the relative contributions of the three major factors that account for the differentiation of species (mutation, selection and migration) in specific cases.

It must be understood that scientists do not need to apologise for the existence of open problems. They are the growing points of science and if at any time none exist then they have to be created by critical appraisal of existing theories and by experimental tests. Of course this sounds like the pinnacle of absurdity to people who believe in their favourite theory, who hate to see their ideas subjected to criticism. But good ideas stand up to criticism, they pass their tests. And if they fail, then we have learned something important.

Two Images of Science: the Edifice and the Balloon

Some of the things that I have been saying can be summed up by two contrasting images of scientific knowledge. The conventional view tends to regard science as an edifice of well based theories (justified beliefs). The alternative view regards theories as imaginative constructs, freely created, to be subjected to tests. They are never final, never conclusively justified, though we can usually form critical preferences between rival theories in the light of the evidence and arguments produced up to date.

The dogmatic view of science can be depicted in an architectural image. Science is like a house that needs firm foundations to hold it up. The edifice of scientific knowledge is based on facts and observations. Scientists are like bricklayers who build layer by layer, brick by brick, accumulating their observations, carrying out their

experiments, meticulously noting the results in their note books to add a brick or two to the walls. According to this theory we need to build on the rock of verified observations otherwise the vast structure of inference and reasoning may fall down.

The more appropriate image is that of a helium or hot-air balloon that floats in the air while remaining tethered to the earth by a string or mooring lines. The 'earth' is the empirical base of observations, experimental tests and practical applications. An example of a mooring line was Eddington's eclipse observations which provided a crucial test between Newtonian theory and Einstein's relativity. These observations cannot be regarded as a source of relativity theory because they were made after Einstein created the theory and deduced various consequences from it. Nor can Eddington's data be regarded as positive confirmation of relativity because Einstein's theory has been revised since that time.

Evidence and observations do not hold the balloon up, like the foundations of an edifice, instead they stop it from floating away, as it will do if people lose interest in experimental tests, in Popperian falsifications, "bouncing ideas off reality" as Colin Tudge put it. People who believe in foundations want to bring the balloon down to earth by filling it with the ballast of observations so that the mooring lines shrink and turn into proper foundations. However the balloon of science does not need to be brought to earth, so long as the mooring-lines remain intact. Instead the balloon needs to be driven higher into the air by the 'hot air' of speculative thought, by bold conjectures that drive our understanding over the frontiers of knowledge. These conjectures need to be controlled but not stifled by imaginative criticism and tests.

It must be understood that scientific knowledge is tentative and provisional, it cannot be established as a body of dogma. Admittedly some features of the world are so well tested, so well probed, explored and criticised that they are for all intents and purposes settled. The debate has moved on beyond these matters. Among these are the notion that the planets go around the sun and not vice versa, also that life evolved by stages from primitive beginnings. These views are not dogmas as the Creationists claim, they are simply so well tested in decades of research and controversy that radically new information and arguments would be required to re-open a debate over them. Meanwhile spirited debate rages over the steps, history and mechanisms at work in cosmology and evolution..

Defects of the Edifice Model

The notion that science consists essentially of piling up data, adding bricks to the well founded edifice, has created serious problems both inside and outside science. Many scientists do not understand the need to have competing theories, the need for open problem situations, for experiments that perform the role of tests instead of verifications and the need to periodically examine philosophical first principles.

The edifice theory promotes over-specialisation. If we advance by accumulating data then the more we accumulate in a narrow field, the better we will get ahead. But problems usually ignore boundaries between fields and disciplines. The poacher often gets the fattest rabbits, as Watson and Crick demonstrated in their work on the structure of DNA.

Over-specialisation in turn has made it harder for lay people to come to grips with science and to retain a healthy and critical attitude towards experts and specialists. If years and years of study are required to get to the frontiers of knowledge, how can an outsider challenge the opinion of people who have spent their lives piling up bits of information in the field? The answer is to follow the advice of Jacques Barzun in *The House of Intellect*:

'With a cautious confidence it is possible to master the literature of a subject and gain a proper understanding of it: specifically, an understanding of the accepted truths, the disputed problems, the rival schools and the methods now in favour. This will not enable one to add to what is known, but it will give possession of all that the discipline has to offer to the world.'

The emphasis on merely "getting the facts" has blunted the sense of intellectual adventure of scientists and also their sense of moral responsibility. If the highest duty of the seeker for Truth is to carefully record observations, where is the scope for reflection on the value and the purpose of the project in hand? It may as well be a project to grow food or to make bigger and cheaper bombs. The project may be completely out of touch with the live scientific problems in the field and with the practical needs of the community.

The edifice concept of science, aided by over-specialisation, has produced a breakdown in communication between the sciences and the humanities, described by C. P. Snow as 'the two-culture problem'. In addition, the traditional (inductive) view is closely related to the bucket theory of mind which is envisaged as a passive receptacle to be filled with information from

the world outside. This view has created a backlash from poets and Romantics with William Blake in the lead. They will not accept a theory of science and the human mind which obliterates creativity.

Thus defective theories of science have alienated several generations of poets from science and in many instances from rationality as well. This is a cultural disaster and Popper's correction to these ideas should earn him our profound gratitude if he had made no other contribution to philosophy beyond the return of the creative imagination to its place at the heart of science.

Conclusion

Many forms of unreason such as Creation Science feed on error, on defective theories of science, including the idea that science consists of an edifice of beliefs that are verified or justified by a process of induction. This has been the orthodox view for over a century, so Creationists and others have had plenty of support from people who appear to be their enemies. Karl Popper has corrected many misleading ideas which confuse both scientists and the lay public about the way that science advances and the way that productive scientists use evidence, imagination, logic and criticism in harmonious combination.

For maximum impact Popper's ideas need to be linked with William Bartley's non-dogmatic theory of rationality. This corrects the tendency to dogmatism that haunts the mainstream of philosophy from Plato through Bertrand Russell to the present. Bartley's ideas deserve a full exposition in the literature of skepticism: in the meantime the works of Popper need to be better known and applied to the teaching of critical thinking as suggested in the Appendix to this article.

Popper's Biography and Further Reading

Karl Raimund Popper was born in Vienna in 1902. He became a high school science teacher and wrote a revolutionary book in his spare time: first published in German in 1934 it appeared as *The Logic of Scientific Discovery* in 1959. On the strength of the book he became a philosophy lecturer at Canterbury College (Christchurch, NZ) in 1937. During the war he wrote a massive defence of democratic principles titled *The Open Society and its Enemies* which exposed Plato as the original central planning Big Brother and also destroyed the intellectual credibility of Marxism. In 1945 he almost moved to the University of Sydney but was put off by local agitation of the kind that was directed at Julius Stone when he arrived to take a chair of Law. Instead

Popper went to the London School of Economics until he retired to work (even harder) at home in 1969. He is still at work on evolutionary epistemology and the philosophy of physics.

The most cogent account of Popper's philosophy of science is provided by his close friend, the late Peter Medawar, in various essays published in *The Art of the Soluble* and more recently in *Pluto's Republic* (Oxford Uni Press). See also Bryan Magee's *Popper in the Fontana Modern Masters* series, Roger James *Return to Reason: Popper's Thought in Public Life* (Open Books) and Rafe Champion, "The purpose of Popper", *Age Monthly Review*, May, 1985.

Among Popper's own books are *Unended Quest: An Intellectual Autobiography*, Fontana/Collins (the latest edition by Routledge), *Objective Knowledge: An Evolutionary Approach* (Oxford University Press), and the three-volume *Postscript to the Logic of Scientific Discovery*, including a volume which argues against some of the forms of anti-realism and subjectivism which claim support from quantum physics.

APPENDIX:

An Introduction to Philosophy

Philosophy could be introduced as a study of critical thinking and Bartley has proposed four types of criticism or tests that may be applied to arguments. These are the test of experience; the test of comparison with other theories; the check on the problem; and the test of logical consistency. None of these tests or checks are unproblematical and Bartley refers to them as 'non-justificationist criticism'. He describes them at length in an article in the Israeli journal *Philosophia* (1982).

The study of critical thinking that is proposed here could be taught at school, it could be used for an introduction to university courses in philosophy, it could be a core subject for all tertiary students. Its content could be adjusted for the interests and capacities of the class and it offers an alternative to the debacle of general studies where students of marketing and organic chemistry have to shuffle and fidget for a certain number of hours in lectures on Introductory Psychology or Medieval Drama. The course would consist of exploration and applications of the four methods of criticism to any theories or beliefs which interest the class.

The test of evidence and experience could lead to the philosophy of science, to a study of rules of evidence in law, to the use of diagnostic tests by doctors, motor mechanics or plumbers, and to the use of clues by

FORUM

Politics of the Paranormal

Phil Shannon

When the bombs started falling on Baghdad in 1991, the reaction of the New Ager in the office where I work spoke volumes about the politics of the New Age. Whilst most other people were roused to passionate support or opposition to the bombing of Iraq, and whilst nearly all showed (or professed to show) at least a modicum of concern at the human cost of the West's military action, the office New Age specimen exhibited blithe unconcern. It didn't matter, I was told, if a few hundred thousand Iraqis were killed because their death would simply mean an earlier than expected reincarnation! Thus was demonstrated the callous amorality of the New Age belief in reincarnation.

This anecdote, however, also suggests a more general relationship between politics and New Age beliefs. The New Age disregard of reality (as we understand the physical world through scientific laws) in deference to a 'higher reality' (energies unknown to science, the subjective nature of 'Truth', the relativism of knowledge, etc.) readily translates into an unconcern with political reality, i.e. who has power over whom and how it is used and abused. Those for whom reality is subjective and located within each individual's head or heart, are not inclined to look to changing society (reality outside the individual) through political action but rather to change individuals through the latest New Age technique. This politically abstentionist position accords smoothly with the interests of those who benefit from their hold on economic and political power because by not opposing the political dominance of the wealthy, the corrupt and the power-hungry, New Agers adopt a *de facto* acceptance of an unjust political status quo and the ills this generates. At first glance, a belief in homeopathy or Atlantis may not appear harmful, but the epistemological and cultural value system underlying New Age beliefs is kin to political conservatism.

This political conservatism is reinforced by fatalism, a characteristic of New Age beliefs in such paranormal forces as astrology and predestination. These forces control us, goes the argument, so it is futile to attempt to change the world.

One useful test of the possible correlation between political conservatism and New Age values can be made in the social laboratory of history.

Nazi Germany is the pre-eminent example supporting the above hypothesis. The paranormal flourished in Hitler's Germany. The extreme right wing politics of fascism was associated with the spread of scientific nonsense. Hitler consulted astrologers. Dowsermen were employed by the military to find water in the deserts of North Africa, and to find enemy battle ships by swinging pendulums over maps of the North Atlantic!⁽¹⁾ More seriously, pseudo-scientific theories about race and intelligence underpinned the political racism of Nazi ideology.

Perhaps, however, the link between political fascism and scientific foolery reflected the freak historical eruption of the irrational. If the Jewish financial conspiracy (and the 'Final Solution') are seriously entertained, can belief in wacky theories like astrology be far behind? But the relationship between conservative politics and the paranormal has deeper social roots, as can be seen from the nineteenth century Industrial Revolution in England. This was a time when the peasantry and the semi-independent artisans and craftsmen were being thrust into an alien wage-earner life ruled by the clock, the machine and factory discipline (if they were lucky) or becoming unemployed and destitute (if they weren't). This social dislocation was accompanied by frequent outbursts of hunger riots, enthusiasm for Tom Paine and the French Revolution, the growth of Trade Unionism and the first mass working class political movement of Chartism. Defeat of these secular and political movements, however, fostered despair and nurtured spiritual and irrational responses such as the solace of orthodox religion, the emotional frenzy of Methodist revivalism, or the millennial expectation for divine intervention to alleviate the desperate plight of the poor and powerless. On the fringes of religion, mystical prophets and seers abounded. The most illustrious of these was Joanna Southcott, a Devon farmer's daughter and domestic servant, who gained a huge following in the early nineteenth century with her mystic doggerel predicting general apocalyptic conflagrations. She relied on the technique that has ensured the durability of Nostradamus - vagueness - as in the following example:

"The writing is on the wall ... let Bel asunder burst ... The saints now judge the earth ... Great Og and Agag where are ye! The walls of Jericho are thou, fall flat! Joshua's rams horns, the seven and twelve, pass Jordan's stream. The Lord's anointed reigns - The rods or laws of Ephraim, ten unite in one, and hold by Judah's skirt...The moon and sun appear - Caleb and Joshua pass the stream in triumph ... Behold from Edom I appear, with garments dipped in blood"

and more of the same lurid and frenetic images⁽²⁾.

This frantic and fantastic prophecy proliferated and could easily be applied to the crises and upheavals of Napoleonic Europe and the social tensions of the Industrial Revolution, gaining a ready foothold in the vivid superstitious imagination of the recently uprooted peasantry with their deeply held belief in the supernatural. As the poet Robert Southey wrote in 1808:

"One madman printed his dreams, another his day-dreams; one had seen an angel come out of the sun with a drawn sword in his hand, another had seen fiery dragons in the air, and hosts of angels in battle array...The lower classes began to believe that the Seven Seals were

about to be opened" (3).

William Cobbett, the first of the prolific English journalists before Defoe, was exasperated by all this supernatural hysteria and "downright balderdash", writing that

"their heavenly gifts, their calls, their inspirations and the rest of their canting gibberish, are a gross and outrageous insult to common sense, and a great scandal to the country", and it is "in vain that we boast of our enlightened state, whilst a sect like this is increasing daily",

he said in 1813 of the Southcottian cult and its relatives like Methodism (4).

Prophets and seers have a long history, of course, but they acquire social importance at certain times of crisis and desperation. Ancient Palestine under Roman occupation produced droves of them. Southcott flourished at a time of poverty, war-weariness, and the defeat of the English radical Jacobin agitation which had been inspired by the French Revolution. In this politically hopeless context, the millennial hope for change was now displaced from the unsuccessful political plane to the spiritual and personal. Southcott's followers saw rivers of blood but they were not revolutionaries.

The retreat into the emotional hysteria and individualist salvation of revivalism and prophecy occurred at a time of defeat of collectivist, political movements. When temporal progress is thwarted, fantasy compensation takes over and vice versa - as E. P. Thompson puts it

"when hope revived, revivalism was set aside only to reappear with renewed fervour upon the ruins of political messianism" (5).

Prophecy and revivalism were attempts to escape, or to make acceptable, the fate of being a poor labouring man or woman. The believer in spirits and visions, as with the drunkard, the small-time criminal and the vagabond, were, and are, apathetic about the capacity of collective action to better their lot.

The least skilled, least educated, least organised and therefore the least hopeful of the poor were the most apathetic and therefore the most likely to take to anti-social spiritual snake oil.

The more educated are not immune, however. After the suppression of the 1905 Revolution in Tsarist Russia, "many members of the intelligentsia and of educated society at large fell into a mood of post-revolutionary despondency and withdrawal. Mysticism, the occult and even what was then considered pornography came into vogue. Social daydreamers now sought salvation in personal liberation and predictions of a revolution of the spirit" (6).

The liberal intelligentsia in Russia had pinned their hopes for reform on a workers' and peasants' insurrection, which, when defeated, left them to cling to the personal and the paranormal as solutions to their desire for change.

As today, the appeal of the paranormal is to the common man or woman (and to some of the more

educated) for individual change and transformation, not to social action. High Priestess of the paranormal, Marilyn Ferguson, argues that people "don't have to wait for the world 'out there' to change. Their lives and environments begin to transform as their minds are transformed" (7). Ferguson promises a change beyond politics, a shortcut to the long-haul business of political organising and educating. Ferguson's New Age is an easy but vapid alternative to the hard slog of critical thinking and political responsibility.

Ferguson's New Age is just the latest of the counter-Enlightenment vogues which have attempted to turn back the clock of scientific and social progress. The 17th and 18th century Enlightenment in philosophy, politics and science had challenged the traditionalist, witch-hunting, anti-intellectual, clerical feudalism that preceded the rise of industrial capitalism. Social and intellectual progress required a break with many ancient beliefs and superstitions. The break was not a clean one, however. For example, the percolation of Enlightenment ideas to the 'lower orders' was hindered by the middle class liberals and newly victorious capitalists who feared the subversive effects of 'Reason' if the lower orders might use it to question why the fruits of progress seemed to go heavily into capital accumulation and the bank accounts of their employers. Voltaire was an atheist in 18th century France but he thought that religion was still necessary for the masses because of its social utility to those who controlled production and wealth - '*Ce n'est pas pour les tailleurs et les bottiers* [It's not for the tailors and shoe-makers]', he said of religion. It was, nevertheless, a less supernatural Christianity because miracles and relics and other brazenly paranormal phenomena now proved too compromising for enlightened sensibility. Removing all the bells and whistles from religion, however, left an opening for other forms of spectacle and mystery. Spiritualism, for example, made hay in the 1850s - "when miracles can no longer be accepted, parapsychology expands its potential public" in the words of the historian E J Hobsbawm (8). Spiritualism was to prove a powerful attraction for disheartened reformers such as the nineteenth century utopian socialist and founder of the Cooperative movement, Robert Owen, in the end.

If, however, in post-Enlightenment times, the paranormal and supernatural have been largely aligned with political conservatism, in pre-Enlightenment times, the relationship was more complex. During the English Revolution in the mid seventeenth century, for example, pseudo-scientific ideas were used against the Cavaliers of King Charles I by the revolutionaries on the side of Parliament from Cromwell's Roundheads to their more radical allies, the Levellers and Diggers. Scientifically irrational, these pseudosciences nevertheless dispelled passivity and resignation, instead of justifying it, and encouraged political action by the powerless.

In these pre-Enlightenment days, before the leap from mediaevalism and magic to science was fully in its stride, rationalism had little foothold in any layer of society

and pseudoscientific ways of understanding the world were all that were available to help change that world. Superstition and magical practices held wide sway in 17th century England - "God and the Devil intervened daily" in the world, "a world full of witches, fairies and charms", writes Christopher Hill, where "the royal touch would cure scrofula" [scrofula was a common, highly visible condition causing painful swelling and open sores on the neck and face but which was prone to natural remission and hence a sucker for the myth of a divine healing touch] ⁽⁹⁾. This credulity had its roots in:

"the traditional insecurity of mediaeval life [which] had been intensified by the new insecurity of the capitalist market" ⁽¹⁰⁾.

To natural afflictions like the plague and bad weather, was added unemployment, inflation, and market-induced food shortages. Persecution of witches increased in the 16th and 17th centuries as scapegoats were sought for these problems.

The marginality of scientific rationalism in this period is evidenced by the residual hold that magic and the pseudo-scientific had on the educated members of society. Sir Walter Raleigh, Sir Francis Bacon and other scientific notables, and the philosopher John Locke, all believed in 'sympathetic magic', the idea that

"bleeding could be stopped at a distance by applying to the weapon a handkerchief dipped in the blood of the injured party" ⁽¹¹⁾.

Alchemy and astronomy had the support of scientists such as Kepler, Tycho Brahe, Boyle and Newton. Amongst political radicals, Cromwell consulted astrologers. There was widespread belief in prophecy. The ubiquitous Nostradamus was mined by all manner of persons searching for answers to the crises of the revolutionary years.

During this political upheaval, pseudoscience often played a positive political role. Astrology and prophecy were both justification and morale-booster for Cromwell's Parliamentarians. Prophecy was an asset to the Revolution - Hobbes believed that prophecy was "many times the principal cause of the event foretold" ⁽¹²⁾. From 1645, a prophet named Lilly became a popular forecaster of defeat and a violent end for the King, his prophecies to a significant degree contributing to bring about this outcome - "his writings have kept up the spirits of the soldiery, the honest people of this realm, and many of us Parliament men" said a Cromwellian member of Parliament ⁽¹³⁾. In 1648, in recognition of his political value, Parliament voted him a gift of the then large sum of fifty pounds and an annual pension of 100 pounds. Arise Evans, a rival and less successful prophet (he predicted victory for the Royalists in the Civil War), put Lilly's success down to Lilly being a hired hand, a bought prophet who wrote nothing "but as the Parliament directed him to write" ⁽¹⁴⁾. Lilly was not an unqualified success, however. In 1652 he predicted "a cessation of all taxes, and all things [to be] governed by love" ⁽¹⁵⁾ - predictions very much spurred by the popular millennial expectations of the time but well outside the bounds of the bourgeois,

pro-capitalist revolution.

Christopher Hill also argues that the then new 'science' of alchemy (a pseudoscience to us now) had "social and democratic possibilities" despite being bad science. He cites one alchemist, highly regarded by Newton, who hoped in 1645 that "money will be like dross" and that this would enable the New Jerusalem to "abound with gold in the streets" and so usher in a utopia of material abundance and social equality ⁽¹⁶⁾. Any 'rude fellow of the base and meaner sort' (as the aristocracy saw the mass of the people) could teach astrology, practice 'physic' and broadcast their prophetic dreams and visions ie to begin to apply democracy in these areas of their lives.

This association of pseudoscience with the radicals, its ability to mobilise the common people for political action and its democratic potential ensured its suppression after the Restoration of the Monarchy in 1660 -

"enthusiasm, prophecy, astrology as a rival system of explanation to orthodox Christianity, alchemy had to be rejected"

and were ⁽¹⁷⁾. Their scientific demerit was a much subordinate consideration compared to their politically subversive function. The silencing of the radical voices after the Restoration, and with them their pseudoscience, did not lead to a resurgence of scientific rationalism. Divine magic returned through the restored King - Charles II is alleged to have 'touched' over 97,000 sick people during his reign. On one occasion, six unfortunate souls were trampled to death in the press of a throng eager to receive the royal touch ⁽¹⁸⁾. Amongst the more educated revolutionaries, too, there was no scientific consistency about their attitude to pseudoscientific claims. For example, political utility determined whether the extreme left wing of the bourgeois revolutionaries, the Levellers, promoted astrology because it was anti-Royalist, or mocked the claim that Charles I's saliva could cure a sick child.

The association of pseudoscience with political radicalism in the English Revolution, however, is the exception that proves the rule. The philosophical Enlightenment and scientific revolutions have since intervened and scientific nonsense is now likely to beget political nonsense. The pseudoscience of IQ measurement, for example, has served to foster divisions and prejudices between black and white and other 'genetically different' groups in society. The Natural Law Party in the recent Victorian elections offered irrelevant Transcendental Meditation instead of informed debate about the economic crisis in that State.

One final historical illustration of the contemporary function of the pseudosciences and paranormal beliefs is Woody Guthrie, the famous mid-twentieth century American folksinger-poet. As late as 1935, whilst the Depression laid waste to people's lives, the pre-political Woody, was delving into Kahlil Gibran, psychic phenomena, the occult, Rosicrucianism, ESP experiments, etc. He was influenced by his step-mother,

a fortune-teller and mystic who

"claimed expertise in chiropractic, phrenology, palmistry, Gypsy Dream Book, tarot cards, coffee grounds, tea leaves, Ouija board, and crystal ball. She had studied the occult with four different spiritualist mediums and two yogis, knew the nineteen points of Rosicrucianism, and could quote more than three hundred healing and gifted scriptures from the Old and New Testaments of the Bible" (19).

The complete inability of any of this to impact at all on the economic tragedy raging in the Dust Bowls of mid-western America eventually led Woody to reject passive Eastern spiritualism and the pseudosciences in favour of political action through an overtly political stance in his songs and through his support for the Communist Party of the USA. Fortune-telling he now saw as "commonsense wrapped up in gibberish", no more than "amateur psychology" (20). Woody located its popular hold in economic factors - with the oil-boom dying and the dust-storms raging in 1930s Depression Oklahoma, "people hunted for some kind of an answer people lost. People sick. People wondering. People hungry. People wanting work". They weren't getting answers from "the banker, sherriff, Chamber of Commerce, preacher" so psychics came into their own as an alternative to political change (21). Woody, by contrast, became a communist, an atheist and an ardent admirer of science and technology as promoted by the Roosevelt Administration's development of hydro-power.

So historically, the paranormal and the pseudosciences have been allies of the political status quo. But does this mean that all sceptics and believers in scientific rationalism are therefore political revolutionaries? No. ASIO would not have any file on the Skeptics (as good an indicator of left-wing subversiveness as you can get in Australia). Yet Carl Sagan, astronomer and prominent US Skeptic, is surely not mistaken in discerning the potential subversiveness of scepticism. If, in the nineteenth century, it was Marx who believed that "the foundation of all criticism is the criticism of religion", then Sagan is following this secular and political tradition when he argues that if people challenge pseudoscientific nonsense using "the elementary intellectual tools" of scepticism,

"perhaps they will not restrict their scepticism to ... channellers. Maybe they'll start asking awkward questions about economic, or social, or political, or religious institutions. Scepticism is dangerous. That's exactly its function, in my view. It is the business of Scepticism to be dangerous" (22).

Footnotes:

- (1) Felix E. Planer, *Superstition*, Prometheus Books, 1988, p 215-6
- (2) E. P. Thompson, *The Making Of The English Working Class*, Penguin, 1991, p 424-5
- (3) *ibid* p 421
- (4) *ibid* p 426
- (5) *ibid* p 427
- (6) Richard Stites, 'Fantasy and Revolution: Alexander Bogdanov and the Origins of Bolshevik Science Fiction', in L Graham & R Stites (eds), *Red Star: The First Bolshevik Utopia - Alexander Bogdanov*, Indiana University Press, 1984, p 10
- (7) Jay Rosen, 'Optimism and Dread: TV and the New Age' in Robert Basil (ed), *Not Necessarily the New Age: Critical Essays*, Prometheus Books, 1988, p 276
- (8) E J Hobsbawm, *The Age of Capital 1848-1875*, Abacus, 1977, p 319
- (9) Christopher Hill, *The World Turned Upside Down: Radical Ideas During The English Revolution*, Penguin, 1975, p 87
- (10) *ibid* p 88
- (11) *ibid* p 88
- (12) *ibid* p 91
- (13) *ibid* p 90
- (14) *ibid* p 90-91
- (15) *ibid* p 91
- (16) *ibid* p 290
- (17) *ibid* p 295
- (18) Sir James Frazer, *The Golden Bough*, cited in *ibid* p 353
- (19) Joe Klein, *Woody Guthrie: A Life*, Faber and Faber, 1990, p 52
- (20) *ibid* p 70.
- (21) *ibid* p 118
- (22) Carl Sagan, "The Burden Of Skepticism" in Basil op cit p 365. ■

Composite Edition of *the Skeptic*

In the last issue we advised that a composite edition of the first five years of *the Skeptic* would be available by now. Like all best laid plans, this one went a-gley as we discovered that the work required was much more arduous than anticipated. We now expect that the composite edition, which will be considerably larger than we first supposed, will be available for sale in April. The price and availability will be announced in the next issue of *the Skeptic*. We apologise for any inconvenience to our readers.

FORUM

Musical Challenge

Blair Alldis

Since included in the aims of Australian Skeptics are: “refusing to accept as true, theories and explanations for which there is insufficient evidence” and a desire “to investigate claims of anomalous phenomena from a responsible scientific point of view”, I offer the following widely held belief for scrutiny. The belief should be of special interest to many Skeptics in view of your report that a surprisingly large number of us are interested in music (*the Skeptic* Vol 12, No 2 p 49)

It is widely believed in musical circles, even by professional musicians and musicologists, that the different keys in which music is played have their own distinctive characteristics, even when played by an orchestra. Here are two quotations from programmes for recent QSO concerts in Brisbane: “...how richly Mozartian is the sonorous sound of its Eb major tonality...” and (concerning Mozart’s Symphony No 39 in Eb, K543), “...Zaslaw suggests that it fares less well in large halls on modern instruments partly because of the ‘flat’ key”. When I questioned the expert who had just delivered a ‘pre-concert talk’ about this symphony, he expressed a firm belief that the different keys do have their own distinctive characteristics (ie qualities, tonalities, moods, ...).

It is certainly true that keys resulting from scales in use before the advent of ‘equal temperament’ tuning (namely ‘Pythagorean’, ‘Just’ and ‘Mean-tone temperament’), did have their own individualities, some keys being quite unusable. Some organs even had a split note on the keyboard, one half of the tone for D# and the other half for the tone of Eb. Perhaps the belief which is currently held is nothing more than a hang-over from those ‘bad old days’.

For many years now, ‘equal temperament’ has been used for the tuning of all fixed-frequency instruments. The whole chromatic scale is perfectly symmetrical from the lowest to the highest frequencies used, the ratio of the frequency of any one tone to that of the semitone below it being as the twelfth root of 2 is to 1, ($^{12}\sqrt{2} : 1$ which is approximately 1.06:1). The whole purpose of equal temperament is to render all keys equivalent on the keyboard (or on any other fixed-frequency instrument), so as to allow complete freedom for

modulation from key to key. (I am not of course saying that all the minor keys are equivalent to the major keys, but that all the minor keys are equivalents and that all the major keys are equivalents). The only difference between one key and another is a difference in *pitch* - we can for example transpose music from the key of D major to the key of Eb major by simply playing the gramophone record (CD or audio tape) a little faster (in fact $^{12}\sqrt{2}:1$ times as fast or approximately 6% faster), so as to raise every tone by exactly one semitone. It seems to me that the ignoring the advent of equal temperament tuning by the believers in this myth is analogous to the ignoring of the precession of the equinoxes by the believers in astrology.

Between 1700 and 1850, the ‘A’ above ‘middle C’ was tuned to a frequency which varied between 415 Hz and 429 Hz ie anything down to a semitone below the present international standard of 440 Hz (concert pitch). So a Mozart symphony in Eb is probably being played by modern orchestras in the key of E, although I have heard no complaints that the ‘character’ or ‘mood’ of the music is wrong!

It is of course true that if a composition is transposed to a different key, the *pitch* will be changed, but this difference would be noticed only by a person who possessed ‘perfect pitch’, (if such a person really exists - another matter which warrants investigation!). But this would be noticed only as a change in *pitch* and not as a change in ‘character’. It is quite common for a song to be transposed into a different key to suit a voice having a different range. I have never heard it suggested that this changes the *character* of the song in any way.

I can understand that possibly there could be variations in the perception of different keys when music is played on a modern keyboard instrument, caused by the fact that the black notes are placed on the keyboard further from the player and also are raised above the level of the white notes. I suppose it is possible that this could result in the black notes being played with a different ‘touch’. Certainly the different keys would feel different to a pianist when he played the music and this might cause him to think that they *sounded* different.

continued p 49 ...

FORUM

Free Will or Not-free Will?

The following pages are devoted to the views of several people on the topic of whether or not humans have free will. This is one of those perennial questions that serve to keep philosophers gainfully employed, and if the question is ever answered to everybody's satisfaction, then we at *the Skeptic* editorial offices will be astonished.

I have been following with increasing bewilderment the debate Graham Preston has been trying to spark over the issue of free will. He is getting absolutely nowhere. He must feel like he is beating his head against a brick wall, such is the obtuseness of most of the replies.

Perhaps some 'philosophising with a hammer' a la Nietzsche will do a little damage to the wall. So here goes; the epistemology typical of *the Skeptic* is a theory of knowledge which places a premium on reason and discounts faith, is self contradictory, and irrational. Stemming from a materialism typical of the modern sceptic, this belief that human reasoning can make sense of the external world is quaint. How in the world I ask, does one come to that belief? It is invalid to reason your way to reason. So it's no use trying to use reason to defend reason as many do. It won't wash. Reason can't even be used to establish the existence of other minds, let alone the validity of reason. Since you can't reason your way to reason, belief in reason rests on an act of faith. As GK Chesterton put it with his characteristic aplomb, "It is idle to talk of the alternative and faith. Reason is itself a matter of faith". Now I don't have a problem with that, faith has its place in all world views. However, what I have a very major problem with is the pretence put up by sceptics (rationalists, atheists, materialists, whatever), that they have no need of faith. All too often such a groundless assertion is put across in the most smug fashion. "We sceptics have no need of your childish immature faith." Reason is the god of the sceptic. Yet reason is not self-sufficient, it cannot explain itself. You must step outside of reason to establish the validity of reason. So I'm afraid it isn't much of a god. This of course brings this particular idol crashing down, for it is an idol based on the foundational assumption that reason is all-sufficient.

Secondly, the materialism of most sceptics undermines any and all grounds for even faith in reason. It reduces

such faith to fideism. Let me quote one your own to illustrate what I mean. This is what Darwinist Professor William Provine of Cornell University has to say:

"Modern science directly implies that the world is organised strictly in accordance with mechanistic principles. There are no purposive principles whatsoever in nature. There are no gods and no designing forces which are rationally detectable... Second, modern science directly implies that there are no inherent moral or ethical laws, no absolutely guiding principles for human society.

Third, human beings are marvellously complex machines. The individual human becomes an ethical person by means of two primary mechanisms: heredity and environmental influences. That is all there is. Finally, free will as it is traditionally conceived - the freedom to make uncoerced and unpredictable choices among the alternative courses of action - simply does not exist... There is no way that the evolutionary process as currently conceived can produce a being that is truly free to make choices." (My italics).

I am not particularly interested right now in Provine's second and third inferences. But I am very interested in his final inference. Provine is clearly a man who understands well where his materialism leads, ie the belief that free will is an illusion. Given the premises of materialism why should we have any more ability to alter our destiny than the planets have? And of course if this is the case, where does this leave reason as traditionally conceived by sceptics? The sceptic clearly believes that with the aid of his reason he senses the world as it really is, and makes choices between various views of it that will lead him to "The Truth". As Nietzsche would have it, such men are The Last Happy Men on Earth. But, given Provine's position, our thoughts are not our own, we cannot make any kind of meaningful choices at all. Our 'reason' is simply a peculiar sensation we feel in our brains from time to time which gives us the illusion of free will. It is evolution's cruel joke. For the materialist to believe in reason as a means of finding the truth is, as I have observed above, no more and no less than fideism. It is rather like the belief of the person who says, "although I can see $2+2=4$, nevertheless I shall go on believing $2+2=5$. But we must excuse each other our beliefs, after all, we cannot help ourselves. (Then again, to excuse or not to excuse implies choice.)

Given that materialism leads to the belief that free

will is an illusion, it seems to me that materialism collapses under the weight of its own massive internal contradiction. The dilemma of the materialist can be expressed thus: "I believe in materialism, but given such a belief it would seem my belief has not been freely chosen. And this being the case, how can I know materialism is true?" Materialism is self-refuting. As mentioned, its epistemology is nonsensical. It is a theory which says there is no such thing as knowledge. Only some variety of belief in God provides a basis for believing in reason which avoids fideism.

Materialists have a distressing habit of trying to kill God at the least possible expense. If we had killed God as Nietzsche would have it, then the Universe would be drenched with his blood. The implications of the death of God are cataclysmic. The person who cannot see that atheism leads to some variety of nihilism doesn't understand atheism properly. As Sartre put it, "atheism is a cruel, long term affair". One wouldn't think so from reading *the Skeptic*.

If this opinion should be published, and if it sparks a reply, it will not do to frame the reply as an assault on atheism. I challenge the readership of *the Skeptic* to answer the questions raised here head-on. This will entail showing how the logic of Provine's position may be avoided. I wish you luck.

David Quinn
Carina QLD

So, Danny Witmer believes that the electrochemical activity of our brains enable us to be self-aware and make choices (Vol 12, No 4). To me, that sounds like saying that a television set can watch itself and even choose what programmes it watches.

Apart from that though, his argument has a far greater weakness. There is no way (outside a laboratory) that we consciously control the chemical make-up of our brain. Hence, we cannot control the electrochemical activity - hence we cannot claim to make truly free choices.

Whatever chemical combination happens to be in our brain at any one time is all that our 'mind' can operate with. Apart then from indulging in wishful thinking and self-delusion, we cannot say we are free agents who are responsible for our actions. Materialists are totally imprisoned by their materialism.

Of course though, our actual experience of life shouts out that we do make real choices. Am I impelled by my chemistry at this moment to write these words? Are you compelled by your present brain make-up to read them?

We want to say 'No' to both these questions, but the honest materialist cannot. The honest strict materialist just 'is' - he or she is just a collection of matter bumping along against other matter.

Previously, (Vol 12, No 3) Danny Witmer, a self confessed strict materialist, found himself asking the question, "Is it possible to be a sceptic and still accept that something can transcend the physical?" So far, no-one has responded to his letter. How can this discussion of free will/materialism have aroused so little response?

But there I go again, forgetting that no-one can respond unless they happen to get the appropriate combination of chemicals in their brain.

Graham Preston
Annerley QLD

David Quinn has accused skeptics of fideism. What have we done wrong? Fideism is the act of basing our knowledge and actions on faith. This happens if we claim that our use of reason can itself be justified by reason. If we make this claim then a critic can ask how we can justify it, and he can keep on asking how or why as long as we attempt to provide further answers.

Quinn claims to avoid this infinite regress of questions and reasons by an act of faith. But this only shifts the question to the problem of justifying his particular source of faith in preference to the packages on offer from rival faith-dealers.

Another option is to refuse to play the 'justification' game and instead to play a 'critical preference' game. This is the way we proceed most of the time: we make a critical appraisal of options (houses, cars, scientific theories, political parties) and form a preference. We do not need to claim that our preference is 'justified' in any ultimate sense because it can change in the light of fresh arguments and evidence.

The common sense 'critical preference' game can be defended in philosophical depth with ideas from Bill Bartley, to be explained in a forthcoming article. He elaborated Popper's insight into the dogmatic and authoritarian structure of Western thought: Bartley's decisive advance in rationalist/skeptical theory is less than three decades old and it is not yet widely known. It provides a telling rejoinder to Quinn and to those in the skeptical camp (such as supporters of induction in the philosophy of science) who unwittingly provide openings for the Quinns of the world to exploit.

Rafe Champion
Cremorne NSW

Freedom and Determinism

Graham Preston (Letters, *the Skeptic* 12.1, p. 47 and 12.3, p. 52) is troubled by an old puzzle about reconciling belief in determinism (the principle of causality, according to which the world is systematically ordered so that its state at any instant is determined by the laws of nature together with its antecedent state) and our belief in the efficacy of choice (the belief that we are able to act autonomously to initiate changes in the world for which we, and we alone, can be held responsible).

Before commenting on the vexing problem of accommodating choice in a deterministic world I want to remark on some surprising conclusions which Preston manages to link with this old metaphysical puzzle. The first surprising claim is that the problem raises particular difficulties for sceptics. An argument which Preston seems to find persuasive runs roughly as follows. All sceptics are materialists; all materialists are determinists; all determinists deny free will; but anyone who denies free will must acknowledge the injustice or irrationality of punishment. So sceptics should (*inter alia*) oppose imprisonment.

This argument limps at every step, but it may be worth trying to uncover some of the layers of confusion. First of all, the conclusion that if determinism is true we should release all prisoners certainly does not follow. A natural rejoinder is that if determinism is true, surely the social institution of incarceration is inexorably locked in the causal order of the world, just like everything else. How could the truth of determinism entail that we should do anything, when all that we do is what we are compelled to do anyway?

But waiving that point, it certainly doesn't follow that if no one is really responsible for their actions then we should release all prisoners. Incarceration has a protective as well as a retributive function. You don't have to be responsible for your actions to get locked up. And the practice of incarceration has certainly been given a purely causal justification as a means of reinforcing certain patterns of behaviour. (Whether that justification is satisfactory is of course a separate issue.)

Determinists, then, need not subscribe to the radical policies which Preston tries to pin on them. But in any case are all sceptics materialists? And are all materialists determinists? And do all determinists deny the reality of free will? Each of these steps in Preston's argument is open to challenge.

Sceptics, I think, are actually a rather more variegated bunch than Preston allows. Sceptics share the view that belief should generally respect reasonable evidential

constraints, but beyond that there is plenty of scope for disagreement. To mention one conspicuous dimension of variation, readers of these pages differ widely in their religious persuasions. And there is also disagreement among sceptics as to whether we can provide a complete description of the world in terms of its material constituents.

But even if it were true that all sceptics are materialists, the step from materialism to determinism is dubious. The classical conception of universal determinism is in any case in very poor shape. The idea that the precise state of the world at a given instant is determined by its state at a preceding instant has been seriously undermined by advances in physics—the very discipline which gave us universal causal closure in the first place! For one thing relativity shows that there is no universal world-wide instant, and for another quantum theory tells us that physical systems don't have precise states anyway.

But suppose we grant (for the sake of argument) that there is such a thing as the state of the world at a given instant, and that each state is strictly determined in accordance with the laws of nature by its antecedent states. Would that entail that freedom of choice is illusory? By no means. There are plenty ways in which efficacious choice and determinism have been reconciled. Perhaps these reconciliations ultimately fail, but demonstrating that would require a philosophical treatise rather than a short letter to *the Skeptic*.

Indeed it has been plausibly argued that efficacious choice actually requires a deterministic framework. My uncoerced actions are precisely those changes which my desires and beliefs cause. I certainly don't claim that there is a solution to the problem of free will which is self-evident and which commands universal assent. It is, like other unresolved problems, the subject of continuing philosophical debate. But Preston's claim about simple incompatibility won't do.

I see no difficulty in being sceptical about a wide range of popular beliefs while at the same time believing that people can generally be held responsible for their actions. (Opinions of readers as to whether we are responsible for our actions seem to be divided. John Fitzgerald (Letters, *the Skeptic* 12.2, p. 50) believes we are not responsible. Andi Stevenson (Letters, *the Skeptic* 12.2, p. 50-1) seems to disagree, suggesting that sceptics, at least, are autonomous.) Even if our actions and thoughts are the products of chemical reactions in our brains, it may be that at some level we actually direct these chemical reactions (a possibility also canvassed by Danny Witmer in Letters, *the Skeptic*, 12.4, p. 54.).

I would like in conclusion to comment on David Quinn's letter (this issue, p.46), which shares Preston's monolithic conception of scepticism, as well as Preston's view that sceptics are committed to a denial of free will. Quinn, like Preston, conflates materialism and determinism, but he manages also to add some further confusions of his own.

My first comment addresses Quinn's claim that sceptics support reason and discount faith. Quinn's argument seems to be that belief is based on reason or faith. But it isn't valid (or more precisely, it is viciously circular) to use reason to justify reason; so we have to accept reason on faith.

One might quibble with the "reason or faith" dichotomy (what about experience?), but I want to take up another point. Certainly all chains of justification must come to an end, and you can, if you like, call the unjustified beliefs which we all ultimately accept deliverances of "faith". (There may be alternative avenues of justification. A transcendental argument may do nicely.) It is in that sense which Chesterton's remark about "reason itself is a matter of faith" is unexceptionable. But that sense of "faith" does not sanction any theistic or religious conclusions.

Secondly, Quinn claims that the deterministic conception of the world (defended by William Provine) is ultimately self-refuting because it leads to inconsistent beliefs. The argument here is murky, but it seems to run

roughly as follows. If free will is an illusion, then it is an illusion that we choose to believe anything. But even sceptics believe that they choose to believe whatever is best supported by the evidence. So sceptics believe both that they choose and that they cannot choose.

Deterministically inclined sceptics will reply that they don't choose to believe anything: their sceptical beliefs are determined by various complex factors, including (hopefully) evidence. Libertarian sceptics will reject Provine's claim that free will does not exist. Provine certainly does not speak for all sceptics.

Quinn claims further that materialists (which he identifies with determinists) can't know anything. Determinists of course do not believe that they hold determinism true because they have chosen to do so, since they don't believe that there is any way to transcend the inexorable determinism of universal causality. But why should a claim be denied the status of knowledge just because it isn't freely chosen? I don't think I have any choice about whether to believe $2 + 2 = 4$, but I know that if I know anything. Quinn's claim that materialism is self-refuting is a *non sequitur*.

It may be that some industrial strength scepticism (such as Descartes') is ultimately self-refuting, but that is not true of the ordinary domestic variety, which is all that is (usually) peddled in the pages of this journal.

(Dr) William Grey
UNE Armidale NSW

... Music from p 45

But even if the above is true, there is still no justification whatever for the belief that the various keys have different characters when played by an *orchestra*. It is believed that orchestras play in equal temperament (although as far as I am aware this has never been investigated), but even if they do *not* do so and lean towards the more consonant intervals having the frequency ratios of Pythagoras, (ratios of the smallest integers), the same practices would be adopted independently of the key in which the music is written. Hence an orchestra, if it modifies the equal temperament frequencies at all, will do so without discrimination between the different keys and hence no characteristics of different keys will result.

It would be simple to carry out a properly controlled experiment to test those who believe in this "myth of the keys". A piano could be used, or better a string quartet, since as I have explained above, it is conceivable that on a keyboard the different location of the white and black notes could justify the belief. I would suggest that:

1. A recording be made of a composition in some supposedly 'characteristic' key, say Eb major. We will call this 'recording 1'.
2. The same music is then recorded, but played in the key of D major (ie a semitone flatter) and at a slightly slower tempo (tempi in the ratio of $1: 12\sqrt{2}$). We will call this 'recording 2'.
3. 'Recording 3' is now played on a turntable rotating at a slightly faster speed (ratio $12\sqrt{2}:1$) so as to raise the pitch of every note by exactly one semitone and restore the tempo to that of recording 1.
4. A group of believers in the 'myth of the keys', including as many professional musicians as possible, be asked to detect the difference between recording 1 and recording 3. It is my contention that these two recordings will be identical whereas the myth would have it that since they have been recorded being played in different keys, there should be a noticeable difference in the 'character' of the music. ■

Free Energy?

Last September I attended a “Free Energy Conference and Festival” in the “Rainbow” region of northern NSW. The keynote speaker was Bruce DePalma, “the world reknowned (*sic*) scientist” and inventor of the “N-Machine/Space Power Generator”, formerly of the DePalma Institute at Santa Barbara, California.

When Bruce stood in front of us, he produced a gyroscope, activated it, and had it spinning on its side in empty space, supported only at one end of its horizontal axis. “Science cannot explain this” stated Bruce, former lecturer in physics at MIT. He went on to declare that Galileo and Newton had it wrong. A spinning gyroscope will hit the good earth off Pisa first.

Back in 1831, we were told, Michael Faraday found that a voltage will appear between the centre of a rotating cylinder magnet (the axis) and its edge. With Faraday’s still unexplained homopolar generator in mind, Bruce tells us “In 1978, after having studied the anomalous inertial and gravitational phenomena of the precessing gyroscope through numerous experiments in the previous seven years, it occurred to me that anomalous electrical phenomenon might occur if the gyroscope was magnetised”.

Anomalous electrical phenomenon did occur (predictably) and this resulted in the production of the ‘N-machine/ Space Power Generator’. According to Bruce, “The key to understanding and explaining the baffling situation of anomalous excess electrical energy generation in free energy machines lies in a re-interpretation of magnetism as not being a property of the magnet, but

LETTERS

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

of space itself.

Now the N-machine/SPG is not just an interesting toy, it will actually save humanity from destruction and usher in a Golden Age of freedom and prosperity (where have I heard that claim before? **Ed**). Bruce told us that the oxygen content of the atmosphere had been reduced from 21% to 18% because of the burning of fossil fuels and that if it is not stopped, we are all going to die! The N-m/SPG produces free energy at no environmental cost! Unfortunately we have Buckley’s chance of having free energy because of the vested interests of multinational companies and governments. Bruce told us of the continual harassment and death threats free energy promoters and researchers are subjected to in the USA.

But don’t despair! At this conference, we heard from John Crittle (close friend of John Lennon and ex-director of Apple Corps music), of a wondrous plan to develop the N-machine here in Australia, and to power Byron Bay NSW with it. Then the cat would be well and truly out of the bag, and “they” wouldn’t be able to suppress the fact that unlimited energy is freely available. John told us a trust fund is being set up to channel funds towards this history-changing goal.

Should I be sceptical?

**Christopher Battle
Repton NSW**

HM? Hmm..

I am indebted to Greg Czechura (Vol 12, No 4) for his critical analysis of Heavy Metal (HM). But I am surprised that he has not noted a peculiar limitation of the range of HM, and indeed of most rock music. The range of HM and rock is heavily confined to the bass end of the musical scale; bass guitars, drums, other percussion instruments, and occasionally the bass saxophone. When included, only the bass end of the piano and other keyboards is employed. The only stringed wooden instrument thought fit to be included is the double bass, which is usually employed as an addition to the percussion group.

Instruments of high pitch - the piccolo, flute, violin, cornet, trombone, triangle, tenor sax, are religiously excluded from all successful HM or rock groups. Is it because the gentler, more subtle instruments could not be heard above the percussion and overpowering rhythm of the bass emphasis that they are omitted? It has been suggested that the exposure of performers and listeners to the high decibel output of rock groups has diminished or destroyed their hearing ability, particularly in regard to the treble end of the scale.

It would seem, however, that melody, tuneful phrasing and the ‘strange harmony of contrasts’ are not appreciated by HM aficionados. Again I enquire: Why? As Lady Bracknell might have said: “I ask solely for information.”

Ben Bensley

Normanhurst NSW

I have often wondered that myself, Ben. I attribute it to the bass motives of rock promoters. **Ed**

Moah on Noah

Barry Price (Vol 12, No 4) would like to “clear up the matter of how Noah knew which animals were clean hundreds of years before Moses was given the list”. He also writes “Noah was ordered to take aboard seven pairs of clean animals, presumably to eat or his family would have starved on the long voyage”.

Presumably he is unaware that Noah and his family were vegetarians. The first dietary law states “And God said: ‘Behold I have given you every herb yielding seed which is upon the face of all the earth, and every tree, in which is the fruit of a tree yielding seed - to you it shall be for food” (*Genesis 1:29*). Even the animals were to eat only vegetarian food (*Gen 1:30*)! It was not until after the Flood that God permitted the eating of meat “Every moving thing that lives shall be food for you; as the green herb that I have given you all” (*Gen 9:3*).

The very next line prohibits the eating of blood: “Only flesh with the life thereof, which is the blood thereof, shall you not eat” (*Gen 9:4*). In the Bible, blood is identified with life and similar statements are made in *Leviticus 19:26* and *Deut 12:23*. The life must have departed from the animal before it can be eaten. This restriction also forbade cutting a limb from a live animal, a barbarous practice common in some primitive cultures.

According to biblical tradition, Moses was the author of *Genesis* which is also known as the *First Book of Moses*. Barry Price seems to be confusing when something was written with when it was supposed to have occurred, centuries earlier.

If I were to write a biography of Galileo and describe him as ‘hip’ but

not a ‘hippie’, then Price’s logic would demand that Galileo not only understand the meaning of both of these words, but also that he must have been living after the 1960s when the word ‘hippie’ came into common usage. Moses (or the Bible editors) use of the words ‘clean’ and ‘unclean’ in the flood account is not any kind of evidence that Noah understood the meanings that these words would have from Moses’ time onwards.

After ‘proving’ that “the Flood took place after God had spoken to Moses” the ‘Do it yourself guide to finding Noah’s Ark’ describes the Gilgamesh epic and then asserts “the authors of *Genesis* changed the landing place of the Ark to Mt Ararat, whose whereabouts they knew, from Mt Nizir which may never have existed”.

What the Bible actually says is that the ark came to rest upon the *mountains* of Ararat (*Gen 8:4*). Ararat was the name given to the old land of Urartu, which corresponds roughly to present day Armenia. This does raise an interesting question: if the authors of *Genesis* didn’t change the name to Mt Ararat, who did?

Albert Braunstein
Carnegie VIC

Psycho-excuses

In *the Skeptic* (Vol 12, No 4 45) Barry Williams complains that he is hopelessly inept at psychokinesis when tested by computer software. No wonder, if you recall that even Geller was only able to influence bits on a disc (probably by a hidden magnet).

A computer (if working correctly) is a deterministic system, so its output is totally determined by the software and the (non-psycho)

kinetic input of the user. Therefore parapsychologists add a source of ‘true’ randomness to their computers to test for PK (a radioactive decay counter or electronic noise generator). Possibly the programmer supplied these random bits on a disc, which should have been influenced by the user before he even knew of the existence of the programme

Don’t laugh. Many parapsychologists firmly believe in that possibility. So I can comfort your president that he was only inept at retroactive (that’s what they call it) PK. (Thanks Gerard, I was worried there for a while. **BW**)

Anyway, the borderlines between four categories of psi are non-existent. Success in telepathy might just be clairvoyance or PK influence on the generator of the target sequence, while the latter might just be precognition of the day the generator produces the most hits.

I have more serious comments on the articles by Bob Stevens and Ian Plimer on various forms of dowsing. In both articles it is not made clear what was the exact mathematical formulation of the hypothesis under test, and that this was decided before the experiment. I don’t really doubt that this was the case (it goes without saying for a serious investigator) but it could have been said more explicitly. Why? Because for the parascientists this necessity does not seem clear at all. In Germany recently, a test at an Austrian University about dowsing was trumpeted as a great success. The number of hits were about chance level, so the experimenter decided that he had searched for series of success and non-success - the then calculated significance level was impressive.

Similar things hold for parapsychology. *A posteriori* meta-

analysis is totally in vogue now. The principle is simple. A sceptic has produced a psi experiment with chance results? No problem! We mix it up with a handful of other experiments, compute an overall significance level and - *voila* - the chance results were eaten up by the majority.

**Gerard Huber
Schierling Germany**

Rights

At the risk of unprofitably extending discussion of the nature of human rights beyond any useful or interesting bounds, might I respond briefly to Alan Towsey (Vol 12, No 4)?

My statement that: "human rights are a set of moral principles that are general, universal and supervening. We possess them simply by reason of being human - they are indicators of our humanness" does not beg any question - it does not assume the truth of an argument without arguing it. It is merely a description of how it comes about that this particular set of rights (which are not further described or defined) attaches to us.

Mr Towsey's misconceptions continue in the next paragraph. The human rights to which I refer are precisely not 'rights' which may be accepted in one society and rejected in another. Such customs and belief systems as he goes on to describe are not what I mean by human rights. The principles that I call human rights override such attitudes - they are indeed (I repeat) general, universal and supervening. The morality of such principles is reflected in their definition and adoption in a set of man-made covenants derived from natural law

and (importantly) legal positivism.

Mr Towsey would enjoy Jeremy Bentham's attack on the natural law theory of human rights:

Natural rights is simply nonsense: Natural and imprescribable rights, rhetorical nonsense - nonsense upon stilts.

But before I fall off my stilts, I take some support from *The Ethics of Human Rights* by Carlos Santiago Nino (Clarendon Press, Oxford; 1991) on p 24:

What matters here is the moral character of human rights, the fact that they originate directly or indirectly from moral principles (principles whose validity, let us recall, does not depend on their formulation or acceptance by any authority), which are general, universal and supervenient and which prevail over other practical principles except when these are also of moral character.

(The other 300 odd pages are interesting reading too.)

And in 1948 Professor Corwin asserted:

From Cicero to the latest decision of the Supreme Court stretches a continuous tradition of two thousand years which asserts that there are rights made of no human hands and beyond the reach of human hands".

**N R Cowdery
QC Sydney NSW**

Statistics

Although I would not go so far as Keith Rex (Vol 12, No 3, p 50) who accuses the scientific establishment of "grand scientific fraud", I am nevertheless aware of the danger. Statistics has always been a fertile ground for the art of misleading the public. Even the great statistician RA Fisher was not immune to such devices. He used the well known fact

that correlation does not prove causal relationship to justify his campaign against the discovery that smoking causes cancer.

The following three examples will illustrate how statistics can mislead even when telling the truth:

1. *Australia has the lowest aircraft accident rate in the world per km travelled.*

Although (possibly) true, this statement is misleading because of the long distances involved in Australia. A more appropriate statistic would be the number of accidents per take-off or landing, because it is then that accidents are more likely to occur.

2. *The life expectancy of Aborigines is twenty years shorter than that of other Australians.*

This is also a true statement, but if life expectancy were linked to income instead of skin colour, it may well be that life expectancy of low income earners be independent of skin colour.

3. *Smoking kills thousands of Australians every year.*

Although this is true, a more appropriate statistic should determine by how much smoking shortens the life span. If heavy smoking were likely to reduce the life span of a 30 year old smoker by (say) 5%, a 30 year old person who would normally expect to live to 80 years would be expected to die at 77. Such a smoker may prefer this to the agony of giving up his addiction. If, on the other hand, it were found that heavy smoking shortens life by 20%, ie if he were told that he might lose 10 years, he may be prepared to make the effort to stop.

The ordinary man is unable to critically assess statistical statements, but he senses intuitively when a statistic is inappropriate. Appropriate statistics may be less spectacular, but in the long run will be more convincing to the average Australian.

**Hans Weiler
Croydon NSW**

Religion and Science

I would like to ask Professor Plimer what he meant by saying on TV (*Quantum Interviews* ABCTV Monday 10 December) that science and religion are moving closer together. I heard Prof Paul Davies, the author of *The Mind of God*, also on TV say the same thing, but it seemed to me at the time that he had voiced an opinion only. He offered no proof, only the suggestion that there was nothing before the Big Bang, and as things are turning out in human development, evolution was meant to lead to human awareness and self-consciousness and could have progressed along no other path. So he concludes there must be a god or some other sort of guiding force, which disproves his theory immediately as a god or guiding force is something, is it not?

It seems to me that none of these conclusions can be correct. Nothing comes from nothing. Everything is formed, caused, by and from something else - solid, liquid, gas and even thought consists of learned words, of ideas that give rise to other ideas, inside the brain. Because evolution took the path it did does not mean it could not have gone on a different path. Perhaps there is some law of physics that precludes all others, I do not know.

I believe, I think logically, that humans invented their gods originally to explain the natural forces of nature, seeing in the gods the image of themselves, as larger-than-life humans, since it is impossible for people to imagine anything outside of experience. Humans then turned it all around, seeing themselves made in the image of gods, giving themselves at the

same time a superiority over all other species on earth. Religion developed from this and remains a belief in supernatural powers, some humans believing that they have a supernatural or metaphysical part or extension ie a soul, apart from the body. I understand that Plato was the first person to enunciate a soul as distinct from the body. Previously, in oral societies, people believed that the gods talked to them in their heads, not knowing about un- and sub-conscious minds, or even understanding the mechanics of language, which indeed we are only coming to understand late in this century. I do not have a soul.

I don't seem to need one. My central nervous system, which functions through rhythm, adores music, through my brain. My eyes see and ears hear, also through my brain, adoring the earth and its beauty, since I am contemplating my own origin - we are all made of the same stuff. And when I die I shall happily return to it, to be one with it. But we need a sophisticated language, writing, printing, books and above all science to understand this.

Also, we do not need religion for ethical or moral purposes; ultimately it is in one's own interest to be moral. I consider the basic morality is to consider the welfare of other humans and other species as important as one's own, so how much more pleasant life would be if we were all moral. But as humans, creatures of a self-important animal species of the planet Earth, we are greedy, conceited, territorial-bound (and all sorts of other things) so most of us are only moral sometimes.

Religion gives humans their right to uncontrolled reproduction, on the grounds that that everything human-born is holy, being in the image of god. It gives them their right to

dominate and destroy all other species and their right to fight and kill each other in religious wars.

On the other hand, science, as I understand it, tells us how things seem to happen. It postulates rules that remain until proven false and it is not fixed or finite, but open, always trying to expand and increase knowledge. It is a never-ending journey of wonderment and pleasure, unlike religion..

So I would like to know how Prof Plimer can say that science and religion are moving closer together. They seem to be antithetical.

Pearl Eisen.
Vermont VIC

Natural ?

Natural ingredients are good for you?

Well, I just found some interesting evidence that is a good example that this is not necessarily true. Sodium lauryl sulphate (SLS) is a 'natural ingredient' derived from coconut oil, and is used in natural shampoos.

Yet, according to a paper written by Dr Keith Green of the Medical College of Georgia USA, which was published following a Research to Prevent Blindness Science Writers Seminar, SLS has been documented as causing: improper eye development in children, cataracts, nitrate absorption (as much as eating one pound of bacon with each shampoo), penetration into systemic tissue in the brain, heart and liver and is a proven skin irritant used in animal experiments.

Robert Rawson
Middle Cove NSW

In Vol 12, No 4, p 54, we published an unattributed letter headed **Poll Response**. The letter was written by **John Pryor** of Mt Waverley, VIC and we apologise to John for making him an unperson.

Response

Dr Carl Wieland (Vol 12, No 4 p 46) is quite correct in his criticism of my reference to the hypothetical “Eve” in my article (Coping with Creationism, Vol 12, No 3). The reference was ill chosen and badly worded. A better example would have been the development of the human embryo.

However, since Dr Wieland professes to believe in the literal truth of the Hebrew creation myth contained in the various bibles, is that his **only** criticism of the points raised in my article?

Alan Towsey
Tahmoor NSW

Thiering

If, like me, you think that Darwin’s *The Voyage of the Beagle* is one of the best adventure/detective books written, then you will agree that Barbara Thiering’s *Jesus the Man* is one of the best mystery/detective books written. As most Skeptics love a mystery I can recommend this book to all.

When Dr Thiering’s documentary *The Riddle of the Dead Sea Scrolls* was broadcast by ABCTV in 1990, it caused quite a stir in the media. Her book, published last year, reveals the meticulous care that went into this 20 year project, but as of now I have not seen one word of criticism from the media.

This book should be causing as much debate as Darwin’s book did last century. Could Harry Edwards do a review or would William Grey set his analytical mind to it?

Could we start a debate?

Laurie Hall
Jamboree Heights QLD

About our Authors

Blair Aldis, music buff and teacher, lives in Central Queensland, where he enlivens the letters columns of the local paper with sceptical letters.

Dr Stephen Basser is a medical practitioner, hospital administrator Victorian Committee member and convenor of the Australian Council on Science and Health.

Rafe Champion is a freelance writer, editor and reviewer. He might be a fan of Sir Karl Popper, but we are not sure.

Harry Edwards, wit, raconteur and National Secretary only gets that way because of subtle radionic energies being beamed out of Skeptics’ Central Office.

Dr William Grey, philosopher and pedagogue at UNE, claims to know the Meaning of Life, but is not telling anyone.

Dr Colin Groves, anthropologist at ANU, campaigns on behalf of endangered species. His next deserving cause will be truthful creationists, a species teetering on the verge of extinction.

John McKeon lives near Brisbane and works in Data Communications for Queensland Rail. He denies that this is done by tapping the rails with a hammer.

Phil Shannon is a Canberra public servant. His previous article on the Gaia Theory (Vol 11, No 3) has been reprinted in *the Skeptical Inquirer*, which brought him some very interesting mail from overseas.

Alan Towsey is a linguist and retired headmaster, with a healthy suspicion of experts.

Sir Jim R Wallaby is having trouble with his old family seat. He would like to be put in touch with a reliable alternative proctologist.

Barry Williams is a warm and wonderful human being. Immodest? Perhaps, but there have to be some perks in being editor-in-chief.

X, our cartoonist for this issue has asked that her name and address not be given. We have respected her wishes and those of her husband, Mr Cosmo Flute of 3 Boneyard Rd, Upotiponpon, Vic 3999

Are you on the run?

Moving for your health’s sake?

Getting out while the getting-out is good?

Well, why not let us know your new address, so we can ensure that you continue to receive the best information available on the paranormal and pseudoscience, while you are on the lam.

Your secret is safe with us; there are no stool pigeons at *the Skeptic*.