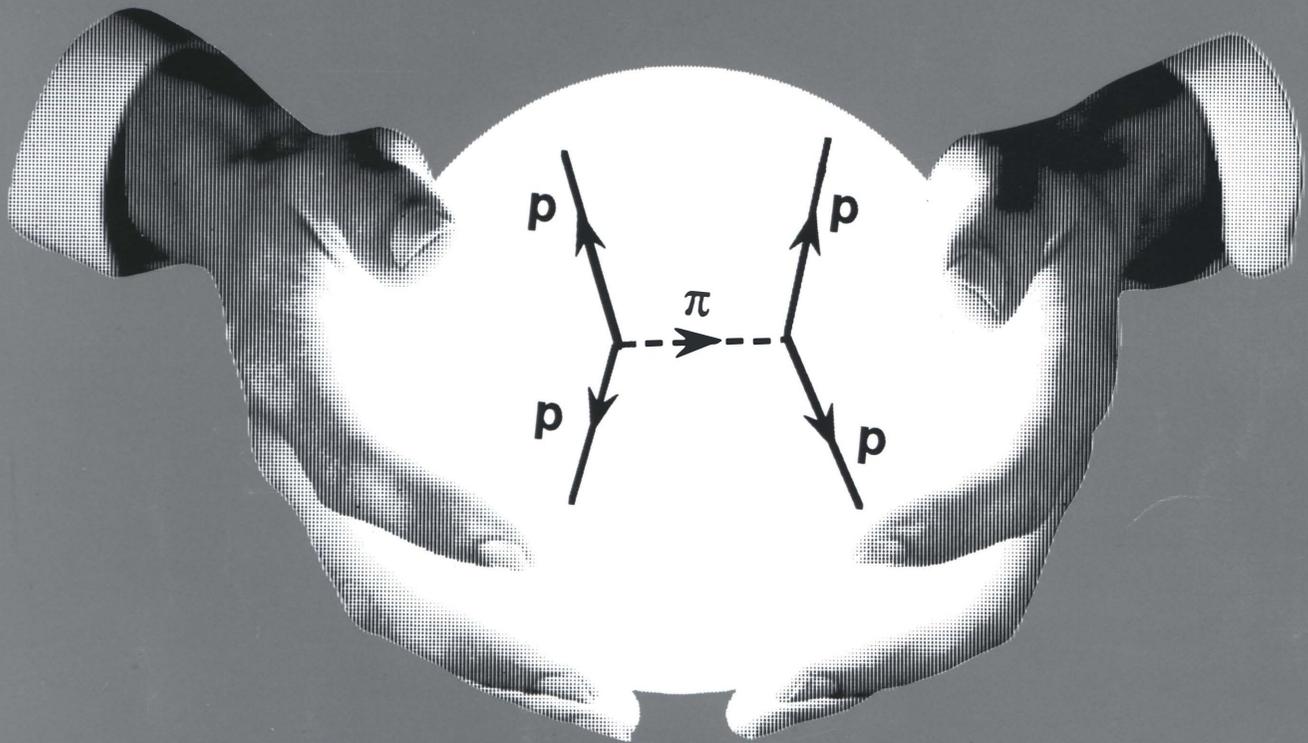


Volume 6 Number 4  
July/August 1992

# *The Skeptic*



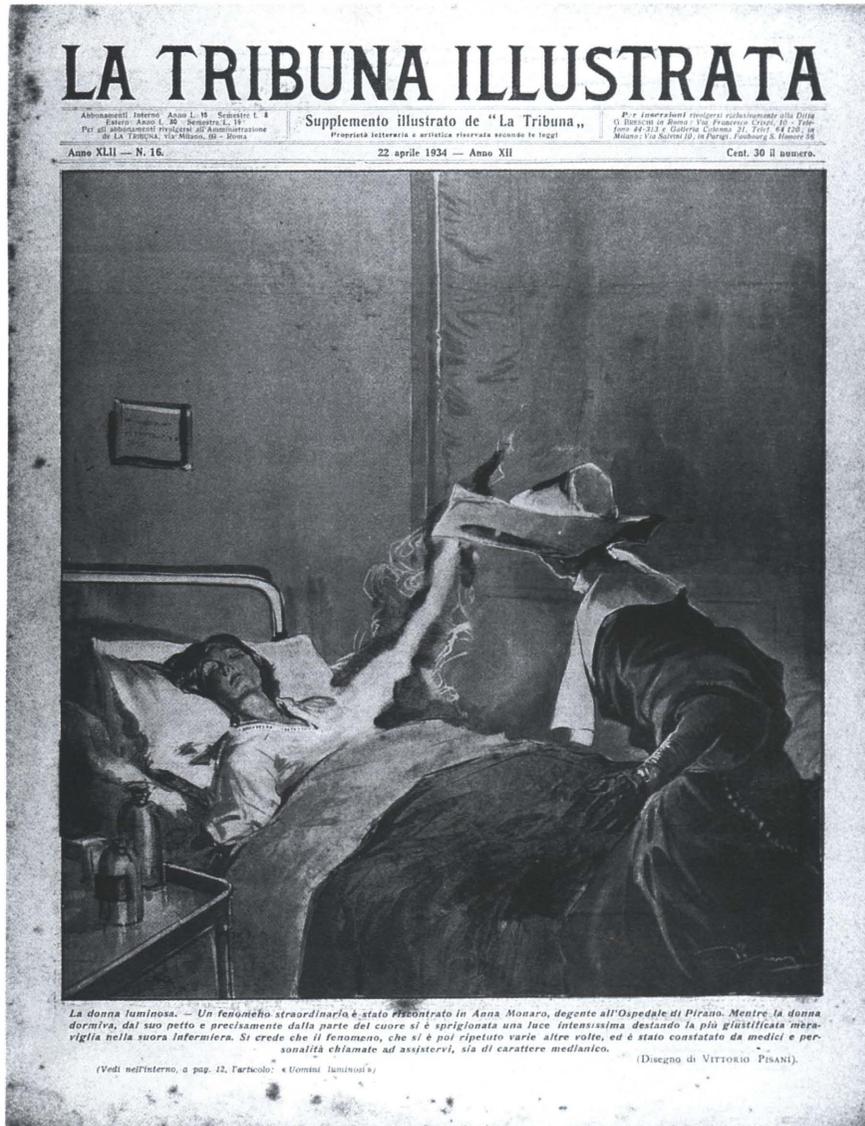
## *Physics and the New Age Science or Hype?*

Also in this issue:

*Crop Circle Hoaxing*  
*A Short Course on Homeopathy*  
*The Science of Miracles*  
*Pyramid Popularity*

£1.85

# Hilary Evans' Paranormal Picture Gallery



One of the points at which so-called paranormal phenomena come closest to mundane experience is that of people who manifest anomalous displays of light or heat, usually spontaneously and often unconsciously. Such phenomena have frequently been reported of saints and mystics: many authors cite numerous examples where there is abundant and often quite respectable testimony of this sort.

Anna Monaro was not a saint, a mystic or anything of the sort. She was a patient (for asthma, according to one account) in a convalescent hospital at Pirano, Italy: the phenomena began in Holy Week, 1934, when like many Catholics, despite being ill in bed, she was doing the customary 3-day fast, drinking only water and soup.

The lights would appear at night, sometimes when she was sitting on the bed with her chest uncovered by the blankets, sometimes when she was lying down. Although she was unaware of their appearance and disappearance, her heart and respiration rates speeded up during the 3–4 seconds the light manifested. On each occasion she woke with a moan, usually calling on Jesus. Witnesses noticed no heat or smell, and the lights left no trace or mark. Dr Giocondo Protti, an Italian physician, investigated the phenomena in some detail. The light always appeared round the cardiac region, usually as a sort of blue/green fan-shape, more rarely as a pink globe; other colours appeared briefly as it disappeared.

*Hilary Evans is co-proprietor of the Mary Evans Picture Library, 59 Tranquil Vale, London SE3 0BS*

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# Hits and Misses

Steve Donnelly

## Paranormal pictures

Regular readers of the magazine will no doubt be aware that many of the illustrations that we use in *The Skeptic* are kindly provided by Hilary Evans of the Mary Evans picture library. Hilary wrote about the problems of running a large picture library in *The Skeptic* 6.1 in an article entitled 'Where Do We File Flying Saucers'. Those of you who start reading the magazine at the beginning will have noticed that we have made some changes to the layout on pages 2 and 3, the major component of which is our new regular 'Hilary Evans' Paranormal Picture Gallery' on the inside front page. (The information that was formerly on this page is to be found elsewhere in the magazine). In each issue, Hilary will choose a picture of interest to skeptics and provide some background information to accompany it. I feel that these pictures will undoubtedly become collectors' items and that many readers may wish to frame them and hang them on their walls. I suggest therefore that rather than ruining your only copy of the magazine you take out a second subscription (we currently offer a subscription for two magazines for exactly twice the cost of a subscription for one copy) and cut the picture out of this second copy.

## Not all there

I suppose it is true to say that this magazine owes its existence to the fact that some people have strange ideas but sometimes the oddness of people's beliefs and desires still manages to fill me with wonder. Take the stone age ice man for instance. Since this long-deceased, hirsute individual was discovered in the snow of the Austrian Alps he has been kept in a laboratory at Innsbruck University. But he is by no means resting in peace. According to the Grub Street column of the *Sunday Times* on 21 June, the laboratory has been contacted by about ten women who have expressed a desire to have the ice man's baby by artificial insemination using his frozen seed. It is hard to understand the motivation of the women (and there is a rather large age difference) but, as the *Sunday Times* article suggests, the resulting baby (hairy limbs and low forehead notwithstanding) might generate enough media interest to become a nice little earner. However, the would-be mothers' hopes have now been dashed by the news from researcher Nadja Reidmann that the ice man is no longer the man he used to be: 'There is no penis. We don't know if it has shrunk or been eaten by an animal'. (Please, no letters telling me that semen is not stored in the penis—the rest of the genitals are presumably also missing).

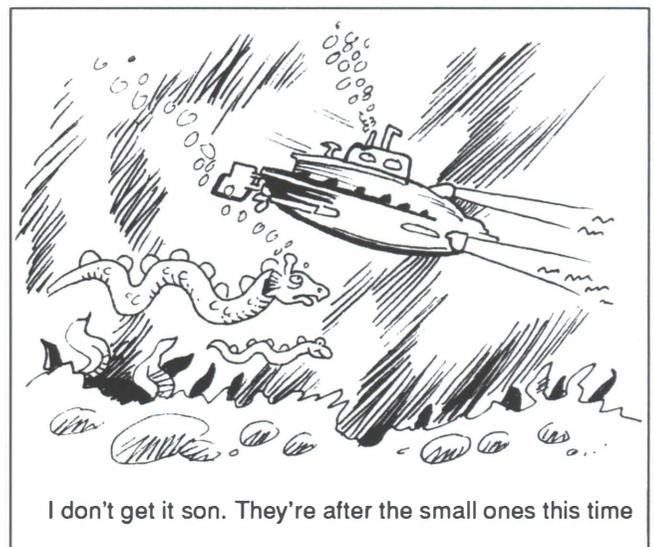
## Pregnant pause

And whilst we are on the subject of odd beliefs and babies and suchlike, a headline in *The Guardian* on 10 June seems fairly germane. It reads 'Pregnant man hoax aborted'. It

appears that Edwin Bayron, a male nurse in the Philippines is not pregnant after all. Mr Bayron, who is a trained midwife, claimed that he was born with both male and female sexual organs but had had an operation to turn him into a fully functional woman. His claim to be pregnant was backed up by a medical history and two urine tests (although, from memory, these test for the presence of a male hormone not present in the urine of a woman unless she is pregnant). The clincher, though, was the ultrasound scan from which doctors concluded that (s)he was definitely pregnant and carrying a boy. They also told reporters that they had felt the foetus kicking and that the baby was due in mid-August. The Phillipino health minister, Antonio Periquet had even magnanimously offered to meet all of M(r)s Bayron's expenses for the delivery and was quoted as saying that Bayron was 'a true hermaphrodite'. There must now be red faces in the Philippines from ministerial level downwards, as a (presumably fairly cursory) examination of Bayron's body (including genitals) revealed that he was an unpregnant bloke. One suggested explanation for his odd behaviour is that he devised the hoax to support a court application to change his name and sex so that he could marry his (male) lover.

## Tremors?

Loch Ness is back in the news again as yet another expedition prepares to look for animal life in this deep freshwater lake. However, zoologists and freshwater biologists are not, on this occasion, seeking evidence for the existence of Britain's favourite mythical monster—this time they are looking for worms. According to *The Guardian* on 4 July the survey of Loch Ness is being conducted by a team with the backing of the Natural History Museum, the National Museum of Scotland, the Scottish Geological Survey and the Society for Underwater Technology and is known as



Tim Pearce

I don't get it son. They're after the small ones this time

Project Urquart (after a nearby castle). Chairing the project is that well known newsreader and Nessieologist, Nicholas Witchell. The worms in question are known as nematode worms and they appear to live just about everywhere including in the stomachs of animals. In fact, according to Dr John Lamshead of the Natural History Museum, four out of five animals on this planet are nematode worms. But don't get your hopes up that Nessie might be a slightly overgrown nematode worm—they rarely grow beyond one centimetre in length.

## Do you believe in miracles

Paul Daniels, known to millions of television viewers in Britain as a magician and games-show host, is also a confirmed skeptic with strong views on religion and morality (see his interview with Mike Hutchinson in *The Skeptic* 5.1). In a front page article on 31 May with the headline 'I do tricks...just like Jesus', that defender of public morality, the *News of the World*, reported with indignation on some recent statements that Daniels had made on religion in general and the miracles of Jesus in particular. He is quoted as saying: 'Changing water into wine? Easy. Walk on water? I've done that. Jesus was nothing more than a magician—just like me. What I do for a living—conjuring—is at the root of all religion' But Raymond Barker, spokesman for the Archbishop of York, wasn't too impressed: 'Paul Daniels is remarkably ill-informed. Magic involves deliberate deception. Jesus never deceived anyone—as millions who've followed his teachings can testify', Daniels goes on to explain that he does not believe in God but does believe in 'good': 'I believe totally in the life force—the human animal is incredible'. But he insists that even believers in God must sometimes 'find it difficult to believe in the guys who are handling his business down here'. He promises not to force his atheism on other people provided that they don't force their Christianity on him.

## Hard to bear

Alaska is not all snow, ice and pipelines—it also is the home of telepathic, garbage eating bears. According to the Associated Press on 27 June the bears in question pose some threat to human safety when they go into the town of Juneau to raid the dustbins, and more than a dozen bears were killed last year. However, Californian Samantha Jean Khury claims that she can communicate with animals through visual images and plans to persuade them to behave themselves using telepathy. She has worked as an animal therapist for 15 years charging \$50 an hour for office visits and twice that for house calls and had her first telepathic communication, a few years ago, with a psychic pheasant.

## Sham(poo) doctor

Patients of Bradford GP Muhammed Saeed might well have been better off consulting New Age alternative practitioners over the last few decades. 'Dr' Saeed had, in fact, been practising medicine for 30 years with no medical qualifications and it appears that he picked up little medical knowledge during his long fraudulent career. According to *The*

*Guardian* on 2 June, Saeed's catalogue of useless and sometimes dangerous medical advice to patients included telling patients to rub cough mixture on their skins, giving asthma tablets for sore throats and prescribing inhalation capsules to be injected. One poor patient was even advised to take one five millilitre spoonful of shampoo three times a day. Saeed's incompetence had been extensively catalogued by a local pharmacist alarmed at his dangerous prescribing but his cover was finally blown, in a trial in Leeds crown court at which the real Dr Muhammed Saeed returned from semi-retirement in his native Pakistan to give evidence. The trial ended on 17 June when the bogus Saeed was convicted of obtaining money and property from the health authority by deception and was jailed for five years.



Tim Pearce

## Unification university

For those of us who work in Britain's beleaguered University system it is to be hoped that a recent event in the United States might have a salutary effect on governmental attitudes towards university funding. Although many organizations in the US claim to have their own academies or universities (for instance the TMs and MacDonaldis) these are in general not easily confused with 'real' academic institutions. However, as a result of imminent bankruptcy on the part of the University of Bridgeport in Connecticut, its trustees have agreed to affiliate to the educational arm of the Reverend Sun Myung Moon's Unification Church in return for \$50 million over eight years. Whilst some may argue that this is no more worrying than the existence of, for instance, Roman Catholic universities in a number of countries, it will be interesting to see whether this is the start of a trend which could give Americans a startling array of cult-funded educational institutions over the next few years. Mind you, this is perhaps only marginally more worrying than the Chancellor of a British university which shall remain nameless (in case I get the sack) who—as reported in *Hits & Misses* in the last issue—sits under a blue perspex pyramid and absorbs the powers of ancient Egypt.

**Steve Donnelly** is a physicist and a reader in electronics and electrical engineering at the University of Salford.

# A Short Course on Homeopathy

Jan Willem Nienhuys

*Is there anything in homeopathy?*

**H**OMEOPATHY (Hm) is a widespread practice in Europe, especially in German speaking countries, France and the Netherlands. The British Royal Family is said to believe in it. In the Netherlands (population 15 million) there are about 400 physicians who practice Hm and every year about 300,000 patients visit one of the different types of therapist using Hm. The sale of Hm drugs is estimated at \$100 million per year.

There are three kinds of Hm, and in discussions one must distinguish between them:

1. Classical Hm: roughly the 200 year old teachings of Hahnemann; a chief characteristic is that each patient receives a strictly personal diagnosis and treatment.

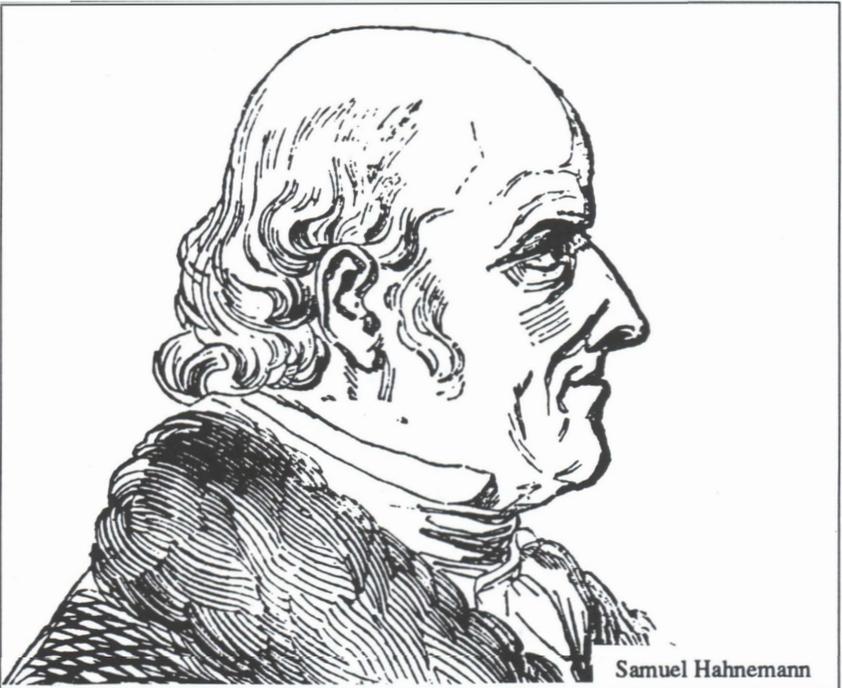
2. Clinical Hm: modern medical diagnostics are used. For common diseases standard Hm remedies are used.

3. Complex homeopathy (Chm): diagnosis is entirely according to standard medical practice, and drugs used are standardised mixtures of Hm preparations. Chm may be called 'drugstore homeopathy'.

Hm was founded by Samuel Hahnemann (1755–1843). He published on the subject for the first time in 1796, and his famous book, '*Organon*' was published in 1810; the last printing is from 1843.

Before we look into Hm, it must be stressed that Hahnemann had quite a few good ideas (for his time). He rejected bloodletting and almost all medicines then available, among which were strong poisons, purgatives, emetics, and preparations based on heavy metals. Besides opium as a painkiller, quinine against any kind of fever and digitalis for heart complaints and oedema, no useful medications existed. Hahnemann proposed that for a given disease only one drug should be given rather than complicated mixtures, and insisted on trying out proposed medication on a number of patients. He also insisted on careful reproducible preparation of drugs.

Hahnemann tried out the effects of kina on himself, and found out that rather than diminishing body temperature he got a fever. Maybe he was allergic to kina or he mistook shivering caused by lowering of body temperature for fever. In any case, he formulated on the basis of this his similarity principle, which still is the cornerstone of Hm: *Sick people*



Mary Evans

*will be cured by drugs or treatments that yield similar symptoms when applied to healthy people.*

One gives a few healthy people a (minute) quantity of a drug and studies their reactions for a couple of days or weeks. One notes down *everything*. In this way the so called 'drug image' of the medicament is formed but no theory about the causes of diseases is formed. When one meets a sick person, one tries to match the symptoms of the sick person to one of the available drug images of which there are very many. A substance like NaCl (table salt), called Natrium Muriaticum, has over 1000 drug images, sepia (fish ink) has over 1500 and sulphur has over 2000. Many of these drug images are due to Hahnemann himself, and some were added by his followers (who always found the same drug images as Hahnemann did). These drug images are listed in the *Materia Medica*. They are often quite irrational and psychological. Factors such as whether discomfort is felt in the morning or in the evening, on the left or on the right and also age, profession, complexion and general body build of the patient are important. For instance, symptom 954 of pulsatilla is: 'An unpleasant message makes him deeply sad and depressed (after 20 hours)'. 'Dreams one can't remember' is another example of a 'symptom'.

Nowadays Hm tries to spread the myth that it uses 'old cures', beneficial herbs and natural medication, but this is

not true. The drugs comprise: salt, sulphur, sand, chalk (oyster shells), various heavy metals like antimony, mercury, arsenic and cadmium, various herbs of unclear pharmacological value, and animal products like Spanish fly and honeybees. The first steps in preparation are often drying, and crushing with alcohol—that is, a chemical extraction technique. Often Hm is confused with phytotherapy, which uses undiluted herbal extracts.

Homeopathic theory has expanded. To Hahnemann's laws are added those of Hering: the cure of the disease proceeds in reverse direction to that of the development of the disease. The less important organs are first affected in the case of a disease developing (hence the importance of all kinds of skin diseases in Hm as diagnostic tool) and these will also vanish last.

Soon after his discoveries, Hahnemann hit on the idea of dilution. The idea is that the sick person is very sensitive to the proper drug. Hm nowadays uses very high dilutions. The theory is that alternately shaking and diluting will increase the 'healing power' of the drug concerned, but possible toxic effects will not be increased. It is not clear why the alcohol or the milk sugar carrier of the drug is not 'potentized' nor the small quantities of impurities in the carrier. The dilutions are often so high that one dose of the drug as a rule will not contain a single molecule of the original undiluted drug. As explanations various New-Ageish fantasies are proposed, involving vibrations, fields, and so on. But in fact, the healing power must be considered immaterial.

A homeopathic consultation will consist of a rather long interrogation of the patient (this in itself may have therapeutic value, but it takes a lot of time, and hence money). All kinds of questions are asked that have no relevance according to conventional medicine. Then the therapist will look up the complaints in the *Materia Medica*, to find a drug that matches them as closely as possible. In practice the therapist has a few standard drug images in his/her mind, perhaps 20 or so. The therapist will therefore 'recognise' a pulsilla patient or a bryonia patient and so on.

The average practical homeopath bases his or her belief mostly on experience: patients are cured. When the cure doesn't occur soon after treatment, this is called the initial aggravation. Response to the cure may take a few weeks, and if it doesn't come, the conclusion is that the drug administered was not similar enough to the complaint, and another hopefully more similar drug is used. The belief in the effectiveness of Hm is therefore similar to the belief in the effectiveness of astrology (which is founded also in the client's satisfaction with the astrologer's pop psychotherapy).

The testing of homeopathy is generally by means of 'provings'—trials with undiluted drugs on healthy people carried out zero-blind. That is, the tester usually knows what is tested and what is to be expected. The idea of a double-blind randomised controlled trial with sick people is completely foreign to Hm. Classical Hm maintains that each patient is unique rendering this approach impossible.

Nonetheless, in the past 15 years about 100 such trials have been undertaken (by clinical Hm, of course), mostly published in the homeopathic literature. Roughly two thirds of them were 'positive'. However, when the reports of these

trials are mildly judged on their quality, only about 20 receive a passing grade (more than 59 out of 100). 'Mild' means that 'blinding not mentioned or poorly described' lowers the grade by only 20 points [1]. Only two trials scored really high (90 points), among which are one by Reilly[2] and a French trial involving Benveniste. Reilly investigated hayfever, which is notorious for being able to produce 'significant' differences between two placebos. The effects in Reilly's case were also very small: after three weeks of treatment the control group was only marginally snivelling and wheezing more than the 'verum' group, and in both groups a considerable number were worse off than at the beginning of the experiment. The French trial was negative.

Another search for literature was more strict [3]. All trials that did not properly randomise were not admitted. Only 40 trials were left, half of which scored positive.

The few occurrences of double blind trials of 'provings', of which I am aware, ended in disasters. In the U.S. there was a Homeopathic college, but after many such failed provings they quit. The Nazis believed in Hm, and had trials ordered, but these failed as well. It is to be feared that countless inmates of concentration camps were used as guinea pigs, for example, to test whether arsenic could cure cholera.

As far as I know, not much is known about the patient population of Hm. But it has many patients for whom conventional medicine offers very little: people with chronic diseases like rheumatism or emphysema and people with complaints that have a large psychosomatic component. In many people the intense interest of Hm increases their feeling of well-being, even if objective measures show no improvement. Of course an increased feeling of well-being is nice, but in the case of heroin it is not considered socially beneficial. The reason doctors use Hm is perhaps because it appeals to their clinical mentality: do something, no matter what, rather than acquiesce and admit that no scientifically tested cure is available for precisely the complaint of the patient.

Hm pretends that it can cure everything, from the common cold to cancer and broken marriages. Using it makes the patient dependent on the therapist. The therapist using Hm is more likely to use other irrational methods as well, including diagnostic methods that scare the patient with imaginary diseases. The use of Hm can result in unnecessary delay of proper treatment. Some Hm remedies would expose a physician that used them to malpractice accusations, because he or she started a well known effective cure too late or not at all.

The spread of Hm is maintained by Hm drug companies. Their idea is that drugstore homeopathy and various myths about the naturalness of Hm get patients interested in Hm. The physicians start with Chm or with clinical Hm (often because of patient pressure), and gradually evolve into use of Hm. And of course, there are many 'healers' who are not physicians at all, who immediately go to classical Hm (because they lack the ability to make proper diagnoses).

I want to close with a remark about conventional medicine. Users of all kinds of alternative medicine, and also

Hm, say that regular medicine has severe failings too. Many regular medications have strong side effects or are quite unnecessary. Examples: cytostatica for cancer, various corticosteroids, and all kinds of sleeping pills. For instance, the use of sleeping pills for more than a week is counterproductive. But still they are prescribed in large quantities. Antibiotics are not only given in case of life-threatening bacterial infections, but also as a preventive medicine in case of the common cold.

These accusations are often quite just. On the other hand, a conscientious physician will in each case weigh the effects of a medication against the side-effects. The abovementioned failings can be seen as imperfections that can and should be remedied by further research and better scientific education of the physicians and the patients. The irrationality of Hm, however, is part of the Hm system, and from a point of view of patient education it is counterproductive. Medical expertise is a scarce resource, and physicians justly try to use their time and skills as effectively as possible. No doubt speaking with each patient for about an hour each time would improve many patients' well-being. But it would also triple health expenditure and would tie up health care professionals with mildly ill patients rather than using their skills more effectively on other patients.

#### Acknowledgements

I have borrowed heavily from a brochure the Dutch Skeptics Foundation has published this spring about homeopathy. The bro-

chure, by a prominent family physician, C.P. van der Smagt, is about ten times as extensive, and this article is just a summary of parts of it, embellished with my own opinionated views.

#### Notes

[1] Kleijnen, J., et al., Clinical trials of homoeopathy. *British Medical Journal* 302, (1991) p.316-323.

[2] Reilly, D.T., et al., Is homoeopathy a placebo response? *The Lancet* 18, (1986) p.881-886.

[3] Hill, C. & F. Doyon, Review of randomized trials of homoeopathy. *Revue d'Epidémiologie, Médecine Sociale et Santé Publique* 38, (1990) p.139-147.

Jan Willem Nienhuys is a researcher at Eindhoven University of Technology, The Netherlands.

#### The Independent UFO Network presents

### 'ET or not ET, is that the question?'

This International UFO Conference will take place over the weekend of August 15 and 16, at the Central Library Theatre, Sheffield, South Yorkshire. An impressive line-up of speakers will include: William L Moore, Jenny Randles, Graham Allen, Dr John Shaw, Robert France, Ralph Noyes, Albert Budden and Kevin McClure (all speakers subject to change). For full details please send a SAE to: Independent UFO Network, 1 Woodhall Drive, Batley, West Yorkshire, WF17 7SW.

## Prometheus Books Prize Crossword

by Skepticus

#### Across

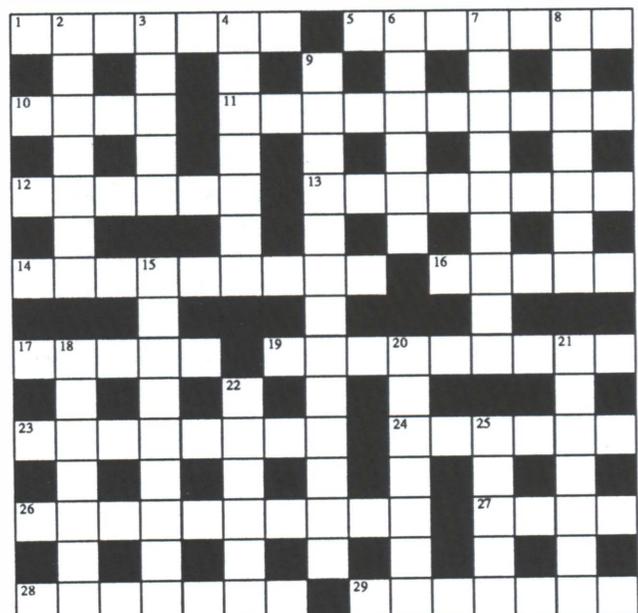
- 1 Little people I fire, as misbehaving (7)
- 5 Horse I'm incorrectly describing as pleasant to eat (7)
- 10 Plead for salary to be about right (4)
- 11 Oust misery? That's strange! (11)
- 12 Sounds like little person's eatin' quickly (6)
- 13 Closed one end up roughly (8)
- 14 Entrance for actors in the Wild West? (5,4)
- 16 Common John—Black or Gold perhaps? (5)
- 17 Little person mistakes ward of lacking nothing (5)
- 19 Act, topless quality—it's the real thing (9)
- 23 See, rot company creates preservative (9)
- 24 Lust he mistakenly investigates (6)
- 26 Calling 'O, no' does not make sense (3-7)
- 27 Sell against demise (4)
- 28 Beheaded body's on ship with you returning from wandering (7)
- 29 Odd? Tom Jones sings 'It's not...' (7)

#### Down

- 2 Landing place for winged people? (7)
- 3 Orbison and Jolson are Regal (5)
- 4 Like a robe, mine is in crumpled red (7)
- 6 King of the 1 gives award to Reagan (6)
- 7 Male pride is skin deep (9)
- 8 I learn of French in jape (7)
- 9 Dope us silly with knowledge, or misleading claim to it (13)
- 15 Ugly mugs drain Church water (9)
- 18 Naive, endlessly droll, upwardly mobile commander (7)
- 20 Unspoilt (oddy timeless) Greek character (7)
- 21 Queen of the 1 is a giant with first class upbringing (7)
- 22 Use it to ask for it on the menu (6)
- 25 Little people in flannel vests (5)

The sender of the first correct entry to be hurled across *The Skeptic's* editorial office by our pet poltergeist will win a copy of Joe Nickell's book *Secrets of the Supernatural* published by Prometheus Books. Send your entry to *The Skeptic* (Crossword), PO Box 475, Manchester M60 2TH, to arrive no later than 20 August 1992.

Prometheus Books specialises in skeptical books about the paranormal. For a free catalogue, write to Prometheus Books, 10 Crescent View, Loughton, Essex, IG10 4PZ.



# Ask Olga

*Olga Destinée, astral agony aunt, answers your psychic questions*

*Our regular psychic problem expert, Professor Mesmo, is still enduring his obligatory academic retreat in Atlantis. Once again his seat is more than adequately filled by Olga Destinée, that renowned New Age prophetess and part-time Earth Mother. Olga is well known in psychic (and crop) circles for her extraordinary empathetic ability, which has been fully tested and documented by our specially-trained experts at Shepherd's Bush's prestigious Steptoe Research Institute. Join Olga as she once again channels the wisdom of the higher shperes to help Skeptic readers find enlightenment.*

**Dear Olga,**

I am absolutely desperate. I have an agonising flushing problem that conventional medicine has not been able to cure. I went to an acupuncturist who told me that my past reincarnation had been evil in the 13th century and that my current problem was an unhappy consequence. I felt pleased that this first consultation was free, but not when the others cost me £94 per hour.

An iridologist told me that my eyes had 'ominous grey flecks on the iris' which was indicative of trouble with the knees. When I gave her details of my problem she diagnosed 'water on the knees'. She made several further appointments for which I paid in advance.

In desperation, I went to an aromatherapist who charged me £49 for bathing in something that smelt like *Vicks* nasal spray. The condition persisted.

I couldn't get rid of the idea about my past selves influencing my future health so I visited a 'Regression Expert' called Robin Bloxhead and I regressed back through the centuries. When I got the 13th Century, my 'self', was the Queen of the Nile who was about to invade Nubia!

Only by deeper regression did I find that the reason for this military adventure was a broken down (arranged) marriage—the Nabob of Nubia having rejected me because of a mysterious flushing problem that had run throughout the Egyptian royal family.

Lately, I've had funny headaches and my tummy rumbles before and after lunch. Could these symptoms be put down to my activities in the 9th and 17th centuries?

Should I now go to a psychic counsellor or the local infirmary?

**Sharon Overflow**



Donald Roomm

**Olga Destinée replies**

My dear, you may need a psychic counsellor—such as myself. I have years of experience with problems not unlike yours. A consultation with me has been known to clear up these embarrassing maladies within the hour—although I have frequently been involved in longer term counselling. (It is also cheaper than the osteopath or the acupuncturist.)

Many of these problems are simply symptoms of distress of the mind or possession by incredibly evil demons. Of course, once I find out about any evil spirits possessing you it takes quite a tussle lasting many years to finally free you from them. Others subscribe to the 'former self' theory, but I am convinced that due to your behaviour in the 13th Century, you probably picked up a few demons (perhaps by dabbling in the occult) and you have carried them through to the 20th Century. Now you have a whole box full of squabbling demons pushing each other about, trying to get full control.

You are probably paying a price for what the Queen of the Nile got up to, and the 17th Century Witchfinder, and the 9th Century Queen Bodicea (perhaps it might have been wise to have avoided sacking Chelmsford). In fact you seem to lack any beneficial reincarnations.

I recently listened to your regression tape and this brought a shiver to my spine. I realised what a thoroughly unpleasant person(s) you must have been. My husband remarked that he would not like to have met you in an alley on a dark night. I cannot but agree! You may have been Queen of the Nile and Queen of Icenii but you certainly lacked any of the social graces, even for a primitive.

I therefore feel that you thoroughly deserve this problem you so dread, and that it will be impossible to counsel. Perhaps it will curb your aggressive instincts! Better luck in the next reincarnation.

**Olga Destinée**

# Ball Lightning and One Other

Frank Chambers

*When to believe, and when to disbelieve?*

IT'S AMAZING TO ME that some of the readers of *The Skeptic* are not just skeptical about ball lightning but actually positively disbelieve. I should like to call to these Philistines' attention a very interesting document published by the United States Air Force. Its reference number is CRD-124, it is dated March 1964, and its title and credits are 'Eyewitness Account of Kugelblitz' by Edmond M Dewan, then of the Microwave Physics Laboratory of the Air Force Cambridge Research Laboratories. Copies may be (or could be at that time) requested from CFSTI, Sills Bldg., 5285 Port Royal Road, Springfield, VA, 22151 USA. I reproduce the abstract in full:

The report records a number of eye-witness accounts of ball-lightning which were submitted to the author spontaneously in response to a newspaper request. Points of potential theoretical interest in each account are discussed individually. The appendix includes material which although already published might otherwise be inaccessible.

Thirty-three persons out of an unknown number responded to the newspaper request with letters describing their personal experiences with ball lightning. In a separate survey of all the 15,923 individuals working for a particular contractor at Oak Ridge (the atomic energy facility of the United States), 3.2% responded with positive answers to a 15-question questionnaire. It is to be assumed that a large percentage of these employees had technical or scientific training and were eminently competent to describe their experiences.

OK, now, after reading the above and taking my word for it that it is a literally true report of the facts, make a note of how you feel about ball lightning: do you think that such a phenomenon exists or not? Has your opinion changed from what it was before you read about it here? Do this before you continue with the article.

New subject: Some of the readers of *The Skeptic* are not just skeptical about levitation but actually positively disbelieve. I should like to call to these Philistines' attentions a very interesting book published in 1928 by Burns Oates & Washbourne Ltd., publishers to the Holy See. For those who are not into these niceties, that means that they publish for the Roman Catholic Church. The book has the 'Imprimatur' and the 'Nihil Obstat' of the Church, which means, I believe, that the Church has permitted/authorized it to be printed and that anyone in the hierarchy, even a parish priest is permitted to read it. Its title and credits are *Levitation* by Oliver Leroy, Professeur agrégé and, although it is long out of print, copies may be examined at the



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SPR library in London and who knows where else. I reproduce the first paragraph of the five-page introduction.

According to an ancient, uninterrupted and almost general tradition, the human body is able, with certain persons, at certain moments, to be raised from the ground, to remain suspended in mid-air without any visible prop, and sometimes move about in it, without the traceable action of any physical force. The phenomenon is now called levitation.

This 276-page book proceeds to examine both Christian and other reports of levitations, giving accounts of several hundred cases, (over 600 names are indexed) and has in addition an appendix listing some 60 other saints or holy persons who have been reported to have levitated themselves but on whom the author felt he had insufficient information. Amongst those treated in some detail are the perennial Daniel Dunglas Home, St Joseph of Copertino, St Teresa, St Alphonsus Liguori, Blessed Andrew Hubert Fourmet, Blessed Bernardino Realino, and Blessed Joseph Benedict Cottolengo. There is a nine-page bibliography. The referenced books are mostly in French and seem to include everything except the *Necronomicon* (little joke for Lovecraft lovers). Leroy terminates his work with eight conclusions which I feel it instructive to include here:

1. According to very old traditions of certain origins, the human body is apt, in certain circumstances, to elude the law of gravity.

2. Catholic hagiography alone is in possession of an ancient written tradition, continuous and varied, based on verified and accurate documents, on levitation. Still, every

fact recorded elsewhere, as those regarding demoniacs, mediums, and non-Catholic mystics, may not be imaginary.

3. Catholic hagiography, among doubtful or even seemingly interpolated facts, presents a number of cases where the evidence for levitation offers the security usually required from historical documents.

4. Those who reject these facts as impossible meet an historical assertion with a denial which it behoves them to make good on the grounds of historical criticism. The most efficient process seems to pick out one of the best-established cases—that of Joseph of Copertino, for instance, to start with—and to demonstrate its weaknesses by exposing fraud or error in it. Such a test has never been done.

5. Those who account for the belief in levitation by an illusion of the mystics or witnesses betray a superficial knowledge of the question. Their arguments can satisfy only a prepossessed mind. Practically these deniers do not form a category different from the preceding ones.

6. If the levitation of mediums is regarded as genuine, the analysis of its physical characteristics and the description of its psychological circumstances preclude any likening of it to that of Catholic mystics.

7. The problem of levitation presents itself in terms that do not fit in with the method of physics. The pseudo-scientific solutions proposed to account for the phenomena are valueless, at least as a general explanation, and there is no sign that something better may be found out in the future. Indeed, levitation is always connected with moral circumstances: a certain way of thinking, of feeling and living. The conjunction of two distinct orders, 'cet effect qui excède la force naturelle qu'on emploie', as Pascal would say, does not suggest the agency of an unknown natural power, but of a cause that is heterogeneous to every natural force.

8. Traditional Catholic theology does not admit a natural cause for levitation—though this attitude has no necessary relationship with its dogma. It regards it as a divine marvel or a diabolic trickery. The levitation of demoniacs, or mediums is a parody, dismal or ludicrous, of the charisma of the saints. As to that of non-Catholic or even pagan mystics, it does not *a priori* deny its divine origins; the nature of the phenomenon in each case is to be judged after the moral context of the life in which it occurs.

I wish I'd said that, especially the part about it's OK for saints but not for sinners.

Right then, students, after reading the above and taking my word for it that it is a literally true report of the facts, make a note of how you feel about levitation: do you think that such a phenomenon exists or not? Has your opinion changed from what it was before you read about it here? As a result of reading about levitation, has your opinion changed about ball lightning?

Postscript: Since first writing the above I have learned of a new book entitled *Ball Lightning and Bead Lightning—Extreme Forms of Atmospheric Electricity* and will attempt to procure a copy and report on it. If anyone knows of any current book on levitation I would be interested to hear about it.

---

**Frank Chambers** is a retired electrical engineer living in Ireland.



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# Physics in the New Age—Part 1

Tim Axon

*Should New Agers appropriate aspects of modern physics?*

ONE OF THE MOST INTRIGUING FEATURES of what is loosely referred to as the 'New Age Movement' is the way in which it attempts to adopt and adapt existing forms of knowledge in order to validate and legitimise its own particular way of viewing the world. An especially notable example of this process is the use that 'New Agers' have made of the ideas of modern physics which (New Agers often contend) is the harbinger of a new holistic paradigm that is destined to overthrow the mechanistic thinking of our present era and herald the coming of a New Age. In this article I want to examine the nature of 'New Age Physics' and go some way towards assessing its claims.

By 'New Age Physics' I mean those ideas deriving from modern physics which have been taken up by New Agers and used to justify their view of the world, irrespective of whether or not the originators of these ideas are themselves sympathetic to the New Age Movement. Unlike most other aspects of the New Age phenomenon, New Age Physics rests on something more than mere fantasy and has its roots in real scientific discoveries and concepts. Nevertheless, New Age Physics presents a distorted version of mainstream physics in the sense that the selection and treatment of ideas is systematically biased towards fulfilling the requirements of the New Age agenda, the intention being to create a system of belief along holistic, anti-materialistic and spiritually uplifting lines. To a scientist, the net result is at once both familiar and strange. As one physicist (Jeremy Bernstein) put it in the course of reviewing a couple of books advocating New Age Physics, 'A physicist reading these books might feel like someone on a familiar street who finds that all the old houses have suddenly turned mauve'.

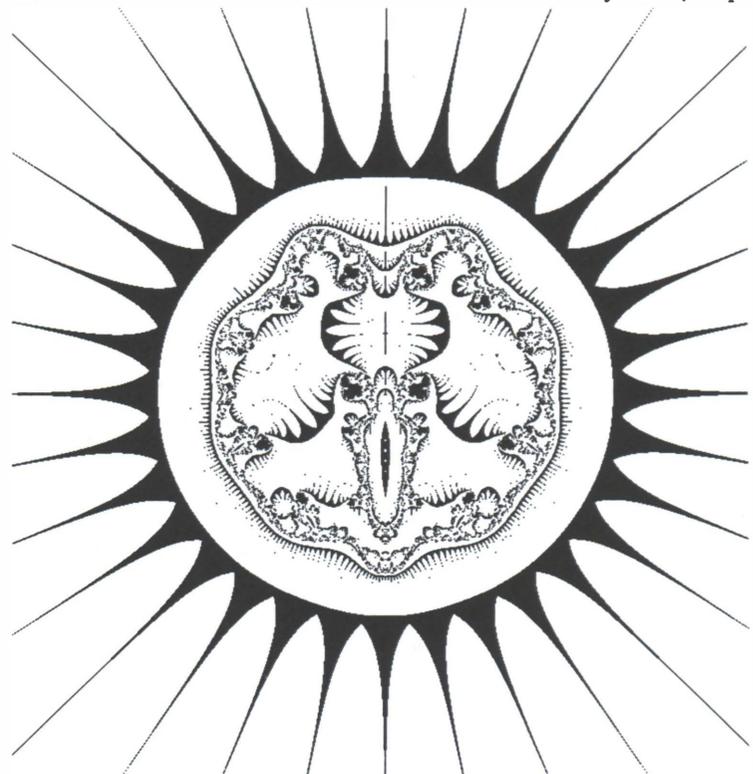
Such distorted presentations naturally arouse the ire of many professional physicists who feel that their subject is being misrepresented and used to further a cause with which they may have no particular sympathy. Yet, however much the style of the presentation may tend to irritate, the actual claims made by New Age interpretations of modern physics deserve to be examined in as cool and as fair a way as possi-

ble. Bearing this in mind, I shall now proceed to survey several of the most prominent themes in New Age Physics and attempt to make some sort of provisional judgment concerning them.

## Chaos and Order

One recent trend on the New Age scene appears to be a burgeoning interest in the ideas of that branch of science known as 'chaos theory', which has recently been gaining the attention of the general public through a spate of new books, magazine articles, TV and radio programmes which have focused on the subject.

Chaos theory is the study of so-called 'chaotic systems' which, in the context of physics, embraces the investigation of such diverse phenomena as the behaviour of the moons of Saturn, turbulent fluids and the Earth's weather system. Most of the chaotic systems which physicists have studied obey the laws of classical mechanics—the laws of mechanics discovered and developed by Newton and his successors—which describe how the state of a system (as speci-

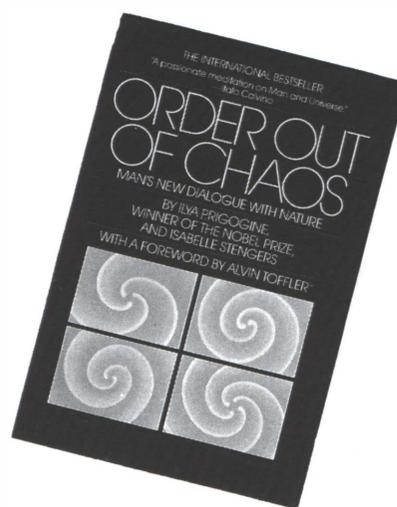


Nick Gunn

fied by the positions and velocities of all its component particles, for example) changes with time. Like all systems described by classical mechanics such chaotic systems are entirely 'deterministic', in the sense that the state of the system at a given moment determines the entire future history of that system. Consequently, if one knows the initial state of such a system then one can in principle predict the state of the system at any later time. However, chaotic systems are extremely sensitive in the sense that even very small changes in the initial state of a system can result in entirely different future histories. And since there is always a degree of uncertainty in our knowledge of the initial state of a system (owing to the imperfection of the measuring instruments which we use in order to determine that initial state) we consequently lose the ability to predict the future behaviour of chaotic systems. This behaviour is typically extremely complicated (in spite of the fact that the underlying laws can be quite simply expressed) and is in fact closely related to that branch of mathematics which studies the properties of the 'infinitely complicated' curves and surfaces known as 'fractals'.

But why should chaos theory have attracted the attention of New Agers? Doubtless, part of the reason is simply the aesthetic appeal of the attractive illustrations of fractal geometries which adorn various popular books on the subject, the most famous of these illustrations being of the so-called 'Mandelbrot Set'. Postcards of the Mandelbrot Set and other chaos-related material can now be easily purchased in shops specialising in New Age goods, and the Mandelbrot Set even made a brief appearance in the summer of 1991 in the form of a crop circle! (See *The Skeptic* 5.5). However, a more important reason for the New Age interest in this area of science seems to lie in the view that chaos theory is somehow holistic, anti-reductionistic and anti-mechanistic in character and therefore lends support to the New Age conception of the world. It is certainly true that chaotic systems are unpredictable, for the reasons given above. However, they are generally entirely deterministic and therefore claims that chaos theory represents a sharp break with the 'clockwork' view of the universe do seem to me to be rather exaggerated. Moreover, there is a sense in which chaos theory is extremely reductionistic in spirit, for it shows that the complexity of the real world can nevertheless be reduced to the operation of quite simple underlying laws. However, there is one respect in which chaotic systems genuinely exhibit holistic features, for the very sensitivity of chaotic systems means that even extremely small disturbances to them can have significant consequences. As is sometimes said, the flapping of a butterfly's wings can radically alter the Earth's weather system, pushing it into perhaps a quite different state than it would otherwise be in. Consequently, it is practically impossible to isolate such systems from the rest of the world, and this seems to imply a sort of broadly holistic view of the universe in which its various parts are connected together to form an indivisible whole.

One scientist who works in this area has gained the particular attention of New Agers. The Nobel prize-winning



physical chemist Ilya Prigogine is probably best known for his work on the relationship between chaos and order. But he is also known for his robustly anti-reductionist opinions, in particular for his view that chaotic systems can exhibit features which cannot be reduced to the laws of classical mechanics. However, Prigogine can only argue this way by according a fundamental role to the errors of observation which prevent one from determining the precise state of a system and thus from applying the laws of classical mechanics in the normal manner. Personally, I see little reason to do this and so I remain extremely sceptical about some of the more philosophical conclusions which Prigogine draws from his work. But, to be fair, other scientists take a more positive view of Prigogine's ideas than I do, and it is certainly true that his anti-reductionist credentials have ensured him an audience in New Age circles.

The New Age enthusiasm for chaos theory is for the most part a recent trend and it will be interesting to see how it develops in the near future. However, apart from this interest in chaos theory, New Agers have tended to concentrate their attention almost exclusively on ideas deriving from 'non-classical' areas of physics (in particular, relativity theory, quantum mechanics and particle physics) and it is to some of these ideas to which we now turn.

### Physics and the Paranormal

The often weird and wonderful ideas of modern physics (and especially quantum mechanics) have sometimes attracted the attention of parapsychologists in the belief that they might provide a possible basis for an explanation of the purported phenomena of extrasensory perception and psychokinesis, and the notion that there exists some sort of connection between modern physics and the paranormal is a theme which crops up quite frequently in New Age literature. There is a certain superficial plausibility to the notion that the weirdness of modern physics may somehow explain the weirdness of the paranormal but, beyond this, there does seem to me to be a real problem in devising convincing mechanisms to explain paranormal effects, and this is one reason for requiring especially high standards of evidence before the reality of such phenomena is accepted. To illus-

trate the sort of problems which arise, let me discuss some of the ideas of quantum mechanics which have been used to furnish 'explanations' of the paranormal.

Quantum mechanics is the modern theory that describes the behaviour of atoms, molecules, sub-atomic particles (such as electrons) and, in principle, everything else as well. One of its most remarkable features concerns the role which the 'observer' plays in the theory, a role which is far more central than is the case in classical mechanics and which has a particular importance in the context of New Age Physics. This may be illustrated by considering the simple example of an observation of the position of an electron by an observer using an appropriate measuring instrument (that is, some form of 'electron detector'). It turns out that, before the measurement is made, quantum mechanics does not (as one might expect) describe the electron as if it had a well-defined but unknown position. Rather, it is described (mathematically speaking) by a wave that is spread out in space. However, when the observer measures the position of the electron the description of the electron's state suddenly changes from one in which the electron is in some sense 'spread out' to one where it is definitely localised at a particular point, and this is the position where the electron is observed to be at the time the measurement is made.

This process is referred to as the 'collapse of the wave-function' and is a completely random effect in the sense that it is not in general possible to predict in advance the outcome of a particular measurement, even when the state of the quantum mechanical system is precisely known. Hence, unlike classical mechanics, quantum mechanics is a fundamentally indeterministic theory. However, quantum mechanics does allow one to predict the probability of a particular outcome from a knowledge of the state of the system immediately prior to the measurement. Hence the probability of finding the electron to have a particular position when a measurement is performed can be calculated using certain mathematical rules that are familiar to all physicists.

There is no serious disagreement amongst physicists as to how to go about calculating these probabilities, and quantum mechanics is found to be an extremely effective theory in terms of its ability to describe a vast range of diverse phenomena. However, the nature of the process of the collapse of the wave-function is still the subject of much controversy amongst physicists, not least because it is unclear precisely what constitutes an 'observation' in quantum mechanics. For example, we may ask, how important is it that an observation should involve a human observer at some

stage? Or is the human observer irrelevant provided that the quantum mechanical system has been 'measured' by the inanimate measuring instrument that he or she uses to observe the system? There is no general consensus regarding the answers to questions such as these, although it does seem pretty certain that a measuring instrument that is itself subject to the laws of quantum mechanics (and one would have thought that this would be the case) is not sufficient to collapse the wave-function: something else must enter the picture at some point or other.

It is perhaps not too surprising that a few physicists have suggested that this crucial extra ingredient might be the mind of the human observer. The most extreme version of this idea supposes that the process of collapse can be accounted for by assuming that the human mind is somehow not subject to the normal laws of quantum mechanics. The

consequence of this view is that the collapse of the wave-function is supposed to occur only when a conscious observer becomes aware of the result of a measurement. This position is very much a minority view, even amongst that minority of physicists who take an active interest in such quasi-philosophical questions. Nevertheless, it has been advocated (albeit in a tentative fashion) by a Nobel prize-winning physicist (Eugene Wigner) and it certainly seems to be the interpretation of quantum mechanics that finds most favour amongst parapsychologists, probably because the curious ability of the mind to collapse wave-functions is vaguely reminiscent of psychokinesis and thus seems to offer the possibility of an explanation of paranormal phenomena.

However, even if Wigner's explanation of the collapse of the wave-function is valid it is difficult to see how it can account for the purported phenomenon of psychokinesis, for the only effect that the mind would have would be to collapse the wave-function of a quantum mechanical system, in accordance with the probabilities which are determined exclusively by the state of the system immediately prior to measurement. In particular, quantum mechanics (as currently understood) does not allow an observer to change these probabilities by some kind of act of volition, and so it is difficult to see how an observer can influence the actual outcome of an experiment by thought alone, as is required of any explanation of psychokinesis.

Another strange characteristic of quantum mechanics which has been held to be relevant to paranormal phenomena concerns the correlations between the results of observations which constitute one of the most important predictions of the theory. The existence of such correlations is not

EUGENE WIGNER ON AN ATOM

§ 7.1 Motion in a Central Potential  
The energy operator (Hamiltonian) for a particle in an arbitrary central potential  $V(r)$  is

$$\hat{H} \rightarrow \left[ \frac{-\hbar^2}{2m_e} \nabla^2 + V(r) \right],$$

and, according to (3.18), the eigenvalue equation is

$$\left[ \frac{-\hbar^2}{2m_e} \left( \frac{1}{r^2} \frac{\partial}{\partial r} \left( r^2 \frac{\partial}{\partial r} \right) + \frac{1}{\sin^2 \theta} \frac{\partial}{\partial \theta} \left( \sin^2 \theta \frac{\partial}{\partial \theta} \right) + \frac{1}{r^2 \sin^2 \theta} \frac{\partial^2}{\partial \phi^2} \right) + V(r) \right] u_{E_n}(r, \theta, \phi) = E_n u_{E_n}(r, \theta, \phi)$$

dependence on  $\theta, \phi$  is precisely that of the total angular momentum operator  $\hat{l}^2$  (see (6.8)) so this can be written

$$\left[ \frac{1}{2m_e} \frac{\partial}{\partial r} \left( r^2 \frac{\partial}{\partial r} \right) + \frac{\hat{l}^2(\theta, \phi)}{r^2} + V(r) \right] u_{E_n}(r, \theta, \phi) = E_n u_{E_n}(r, \theta, \phi)$$

from it is easy to see that

in itself particularly surprising: similar effects are predicted by classical mechanics and are in any case familiar from everyday experience. For example, suppose that I arrive at work one day only to discover that I am wearing a pair of odd socks. Then it would be neither inexplicable nor particularly strange if on the same day my wife also discovered a similar pair of odd socks in the sock drawer back home. Clearly what happened was that I got two pairs of socks mixed up when I was dressing before leaving for work, and one pair of odd socks went with me whilst the other pair remained at home. Consequently, in order to explain such a correlation between my observation and my wife's, I do not need to assume that it was the act of looking at my feet that somehow turned my socks odd nor that it was the act of looking that was somehow magically responsible for producing a pair of identical odd socks in the sock drawer back home! In this context such an explanation is clearly unnecessary and would be ridiculous.

Quantum mechanics also predicts correlations between observations which can be made at a wide distance from one another (and without any diminution of the effect with distance). This immediately provokes an explanation analogous to that which I used in order to explain the correlation between the two pairs of odd socks. Thus we might suppose that the physical systems described by quantum mechanics have definite properties (analogous to the pattern of the socks) which they carry about with them and which may be correlated with the properties of other physical systems. Observations simply enable us to learn about these properties but are not responsible for creating them and cannot exert any sort of magical 'action at a distance' effect. However, despite this plausible explanation of quantum correlations, it turns out that the correlations predicted by quantum mechanics are in some sense 'too strong' to be explicable by this sort of mechanism. Consequently, if the correlations are to be explained at all, then we must invoke something like the 'ridiculous' explanation of the 'sock-effect' (where the simple act of looking at my feet is somehow responsible for producing a pair of odd socks in the sock drawer back home). Thus we must suppose that observations can affect the state of a quantum mechanical system, even over arbitrarily large distances! Such a phenomenon is perhaps the nearest thing to magic (or maybe the 'acausal connecting principle' of Jungian synchronicity?) that is known to orthodox science. A sceptical Einstein once referred to such effects as being analogous to telepathy, but there is now excellent experimental evidence that such effects are real.

But could such effects explain actual telepathy (assuming it exists)? Several parapsychologists seem to have supposed so, but there are at least two problems with this proposal. Firstly, the correlations predicted by quantum mechanics are in general extremely difficult to detect and it is not clear how one could devise a suitable mechanism using them that would be able to explain telepathic phenomena. Secondly, and more importantly, it turns out that although quantum mechanical correlations are too strong to be accounted for by the sort of 'sensible' explanation advanced in the case of the sock-effect, they are nevertheless too weak to allow for the transmission of actual messages over arbi-

trarily large distances. And so the use of such correlations as an explanation of telepathy seems entirely problematical.

Consequently, it is difficult to see how the collapse of the wave-function or quantum correlations can be used to furnish an explanation of either extrasensory perception or psychokinesis. In spite of this, I would not wish to deny that it might in principle be possible to modify the laws of physics as we currently understand them in order to account for paranormal phenomena. However, the few attempts which have so far been made in this direction seem to me to have a distinctly 'half-baked' feel about them and are really not very convincing. Moreover, when one takes into consideration the fact that most scientists dispute the very existence of the phenomena for which such explanations are devised then I can only conclude that attempts to co-opt modern physics on behalf of the paranormal are extremely premature.

Perhaps the only justification for raising the concepts of modern physics in the context of parapsychology is that—whilst such concepts may be of no direct relevance to the paranormal—they at least go some way towards overcoming the objections to the paranormal based on an appeal to 'commonsense'. The argument that paranormal phenomena defy commonsense and can therefore be dismissed without further investigation has been advanced occasionally in one form or another by skeptics. But, it may be objected, the concepts of modern physics also defy our commonsense intuitions concerning space, time and causality, and yet there are undeniably excellent reasons for accepting them nevertheless. Hence the 'argument from commonsense' cannot be valid. This is no doubt true, but the argument from commonsense is really a pretty unsound one in any case, and one hardly needs a knowledge of modern physics in order to recognise its falsity!

In the second half of this article (to be published in the next issue of *The Skeptic*) I shall examine some other themes associated with New Age Physics. In particular, I shall take a look at those which use the ideas of modern physics to argue the case for an holistic vision of the universe which many New Agers believe has more in common with the writings of mystical thinkers than with the world-view of orthodox science.

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# The Science of Miracles

Eric Stockton

*A look at the many sides of Nature*

**I**N HIS ARTICLE 'Reason, Science and the New Demonology' (*The Skeptic* 4.6) Andrew Belsey noted that 'Nature is simply whatever exists and the task of science is to discover what it is like, at a fundamental level... To put the point simply: we cannot lay down or even predict what science will be like in the future in either its methods or its results.' Belsey's eminently sane observations about Demonology set me upon the task of considering miracles in a somewhat like manner.

The skeptic is often confronted by what the believer thinks is a trump card—miracles. A miracle is usually defined as 'an event contrary to the laws of nature'; it can also be considered that a miracle is 'an event that creates faith'. (If it were the first it would also be the second).

It is quite foolish to be sidetracked into debating the authenticity of alleged miraculous events. To be fair, the Roman Church (which sets great store by the supposed reality of miracles in general) can be ruthlessly skeptical about alleged instances. The Vatican can be very hard-nosed when confronted by any old tall story from the back of beyond on the sole say-so of some obscure crackpot. The secularist should be equally careful and avoid trying to prove a negative on the dubious ground that whatever it was 'did not happen because it is impossible'.

Many things happen that might, at some stage, have seemed impossible. Imagine a man who has been cut off, by chance circumstance of war, from the modern world (perhaps he has been living rough in some obscure Far Eastern jungle and has only just been rescued, decades after the end of World War 2). Such a man could well accept that I have typed this article. If I told him that I had a special kind of typewriter that enabled me to correct errors before they were printed, that enabled me to move whole paragraphs from one part of the article to another before printing, that could, by telephone, be used to type my words on a paper hundreds of miles away from where I am sitting... he would react in various possible ways: number one, he might call me a tease or a liar or a madman saying that 'such things are not possible'; or, perhaps, number two, he might say it was all a miracle—using the word as defined above. My back is broad: I don't object to number one. Perhaps he is inclined to go for number two as the truth of the matter. We must examine this possibility carefully.

'Such things are not possible' is false in this instance. On what basis might he think otherwise? His reason would



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be 'these things are impossible because if, hypothetically, they were possible, I would not be able to understand them.' The easy assumption, that possibility is limited to what we can currently comprehend, is one that we all tend to make and never should make. Columbus did not fall off the edge of the earth even though people could not comprehend how that could be avoided.

It is not good enough for you to say that these words cannot now fade from the paper and be replaced by my voice reading them to you *merely because that would be impossible for you to understand*. Perhaps it is impossible anyway but *not* simply because it would exceed your powers of comprehension were it to happen.

With such thoughts in mind, the catch in the 'miracle' idea is not necessarily in the events cited being deceptions, or in their being readily explicable within the limits of existing knowledge and comprehension. The catch is in the concealed assumption that we *know* the laws of nature as final truth. We do not need to claim that those laws are the whole truth but, only if we know them to be 'the truth and nothing but the truth' could we say that any supposed event would be contrary to them.

People who are not scientists, and some who are, have very exaggerated ideas about the validity of the 'laws of nature'; they are not what they are cracked up to be. These laws fall into two extreme categories in many instances they are a bit in both.

An example of one extreme is the law that when you halve the volume available to a given quantity of gas, it responds by exerting double the pressure on the walls of the vessel containing it. This—Boyle's Law—is the summary

of many observations but is dependable *only* in the circumstances in which those observations have been made. If you work at very low temperatures, or at very high pressures, gases do not behave like this. A hypothetical race of beings living on the deep-sea bed would not have discovered Boyle's Law as he did, not because of lack of his ability and skill, but because the 'law' is not 'true'—it is not there to be discovered—in the conditions of high pressure and low temperature prevailing in the ocean depths. 'Laws' of nature are often like that—usable generalisations from experience that are not dependable beyond the scope of that experience. The old certainty that 'what goes up must come down' is now known to be a grossly limited generalisation. If you throw something up hard enough, it goes round (in orbit); if you throw it up harder still it does not even go round—it goes away into 'outer space' never to return (so far as we can tell).

The other extreme case of 'laws of nature' is exemplified by the Laws of Thermodynamics. These laws describe the sorts of transformations that energy can undergo. They cannot be proved directly by experiment. They are, in reality and in the strict sense of the word, 'dogma'. People expert in thermodynamics accept these laws because they form a framework within which a vast and varied range of observed facts can be fitted logically. The whole edifice is so satisfying to those who can comprehend it that they have no hesitation in stating as fact anything that is needed to keep the structure intact. If anybody thinks that's rather like theology—it is!

So the laws of nature, as 'known' to us are, partly, limited generalisation from observation, and partly wide-ranging doctrines that 'feel' right—if that's the way you feel about them (and informed people do). The great idea of evolution is both: it is a consistent summary of many facts and it is a grand scheme that appeals to people who feel that 'it must be true'. But, whatever the place of any law of nature in the spectrum that runs from summarised fact to irresistible dogma, we do not *know* those laws well enough to state categorically that any event that may be authenticated is certainly contrary to them. The whole basis of the

accepted definition of 'miracle' is flawed—and that without any disputing the authenticity of alleged instances. A surprising event, given that it has been authenticated, does nothing to contravene the 'laws of nature', whatever they may, or may not, be—it merely reveals that we do not know them as well as we may have thought we did. The surprise does not necessary reveal that 'God has countermanded the laws of nature', perhaps to fortify Faith. It can as easily mean, simply that we are not as smart as we thought we were.

The idea that God, supposing such to exist, would create a law-regulated universe and then proceed to mess about with it just to show He can, seems to be a sort of mild blasphemy, a suggestion that God is one who 'buys a dog barks himself'. I prefer to explain surprise as following from our ignorance rather than from divine caprice or cosmic conjuring tricks for our delectation.

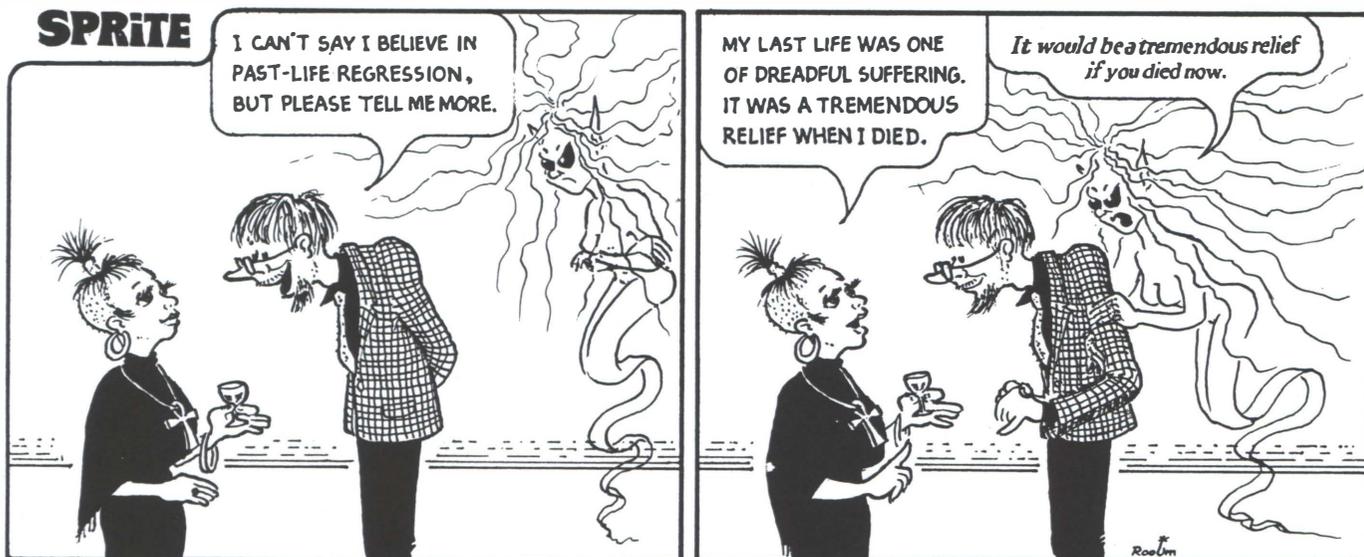
One basic humanist dogma we need to identify (and of course we have dogma—which, if we are honest, we question) is that possibilities that are beyond our immediate or foreseeable comprehension are not the less possible on that account, and that all real possibilities are part of nature—the single sole totality of what exists, has existed and will exist. We assert that the remedy for our ignorance, of anything, is to extend our experience of it, not to resort, much less revert, to the supernatural as an evasion of that ignorance.

Finally, a basic theistic dogma is that there is a need for belief in a god as a basis for moral standards and that a belief in miracles, as defined above, is necessary to generate faith in god. Humanists assert that we do not require to accept tall stories about 'feeding the five thousand' or 'walking on the water' as a basis for relating satisfactorily to our fellows and to the society wherein we live. It would not even make any difference to us if the stories (most improbably) were proved to be historical facts. Such proof would only tell us—what we ought to admit anyway—that nature is more many-sided than we currently think.

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Eric Stockton lives on Orkney and is the Editor of *The Scottish Humanist*.

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# Pyramid Power

Jerome L Cosyn

*Getting in shape for the New Age*

**T**HE OTHER DAY I happened to run into my friend Roland in a bookstore. Roland is actually more of an acquaintance than a friend, though he does have a way of showing up at my parties, even without an invitation. This isn't really as bad as it sounds, because Roland is a catalyst—whenever he is around, conversations are always entertaining, though often skewed a bit out of the ordinary plane. Or perhaps because they are skewed. In any case, I spotted Roland sauntering through the aisles between Mystic & Occult and Self-Help and I slipped up behind him and said, 'Hey buddy, can you spare a pyramid?'

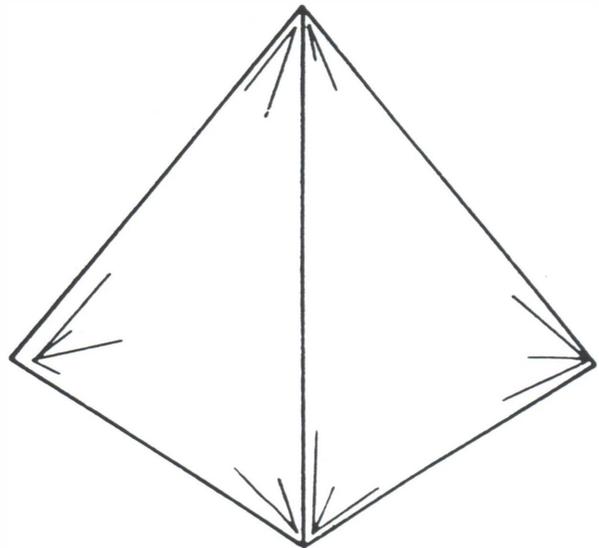
This was not as odd a question as you might think because the last time I had seen Roland he was in an absolute frenzy over the pyramid power craze. Roland is always wrapped up in some craze or other. Once it was Kirlian photography, and he insisted for months to anyone who would listen that he could diagnose ESP disorders you didn't even know you had, and prescribe remedies, if you would just let him examine a photograph of your aura. Another time he was off to Alaska to prove that he could change the shape of the Aurora Borealis by flapping a bed sheet at it from the ground. But his infatuation with pyramid power had even that beat.

Roland would discourse for hours (if no one stopped him) about the power of the pyramid shape, and how it could enhance mystic powers of the mind, cure disease, ease stress, improve your sex life, prevent baldness, stimulate thought, remove plaque, housebreak your cat, unclog drains, and even relieve the heartbreak of psoriasis. He slept under a pyramid, exercised under a pyramid, grew plants under pyramids, preserved food under a pyramid (until his bout with botulism), and (he claims) had sex under a pyramid (though his hypothetical partners were never on hand to support his assertion that it was a religious experience).

'Oh, it's you,' said Roland, quite unnecessarily, as I knew it was me all along. 'I was wrong about the pyramids.'

'No!' I exclaimed, sympathetically. 'Well, nobody's perfect. So you got rid of all the pyramids, eh?' I was looking forward to hearing what had replaced them.

'Oh, not at all,' he said. 'The pyramid is fine, in its way, but it wasn't the complete answer. It turns out that different parts of the body need different shapes to attune them to the harmonious vibrations of life force with the greatest clarity, so that they can receive maximum stimulation. The pyramid happens to be the best shape for the brain, which makes it



extremely important, but other organs need other shapes. For example, the heart should have a sphere suspended over it while you're sleeping and a football while exercising. The liver responds best to a horseshoe, but a horseshoe is all wrong for the pituitary gland, which needs a cube. The stomach is best attuned to a cone, and the spleen should have a cylinder, unless you are having trouble with your gall bladder, in which case a cylinder only aggravates it, so compromise and use a torus for both. But never place a torus near your lungs! They need something with sharply defined edges, like a cigarette box.' He paused for breath and I interrupted, managing to keep a straight face while I asked, 'What about the genitals? What do you hang there?'

'Oh, you need a double helix for that,' he said quickly. 'It enhances fertility and virility, because it resembles the shape of the DNA molecules and resonates with their life force.' I wanted to ask more questions, since it is customary among those of us who know Roland to pass on any Rolandisms we can, but I knew that if I didn't get away soon I would need to find out what shape was best for repairing viscera that had split while containing hysterical laughter.

So I resolved to let it go with just one more question regarding the effect all these shapes had on his sex life. But alas, it seems that, though Roland is in better tune with the cosmos than ever before, his sex life has not had the opportunity to blossom with its new power. Apparently the women Roland knows are quirky about going to bed with someone festooned and beribboned with more ornaments than a Christmas tree at Macy's. Perhaps he should try flapping a bed sheet at them while reading their aura under a dodecahedron...

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Jerome L Cosyn is a freelance writer living in Ohio, USA.

# Hoaxers on trial

Robin Allen

*An on-the-spot report of a crop circle hoaxing competition*

**I**N THE EIGHTEENTH CENTURY, the golden ball atop the spire of St Lawrence's Church in West Wycombe overlooked the antics of the notorious Hell-fire Club. On the night of Saturday 12 July however, this icon gazed down on misdeeds of a different kind. Teams of crop circle hoaxers, enticed by the prospect of winning £3000 in a competition organised by *The Cereologist*, *The Guardian* and the Koestler Foundation, had converged on a nearby field and were feverishly manufacturing a complex formation designed by the experts to test their abilities.

One did not need to be a cynic to suspect a tawdry Public Relations exercise designed to discredit the hoaxing hypothesis and claw back some of the credibility lost by cerealogists—circle researchers—during the hoaxing debacle of 1991. An exercise of this kind could never shake the arrogant cerealogical conviction that 'real' circles cannot be faked. The recognition of such circles is profoundly subjective, and researchers have more than shown themselves able to see whatever they need to see in any circle: each entry could easily be denigrated on *ad hoc* grounds. There was no reason to believe that experienced circlemakers would be present: most of the entrants were new to hoaxing, and several were committed to non-hoax explanations. Nevertheless, a reporter from *The Guardian* idiotically announced that any failure to duplicate the set features amounted to a disproof of the hoaxing hypothesis.

Suspicious of the motives of, and unwilling to indulge the whims of, researchers who had reacted with such dis-

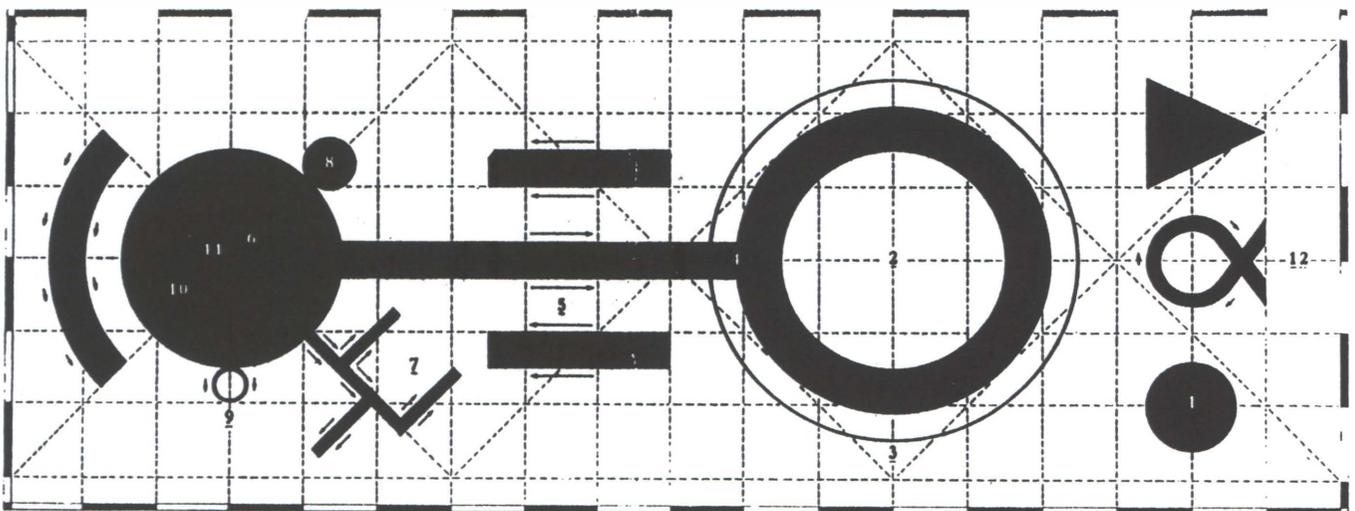
graceful petulance to the hoaxing events of 1991, Doug and Dave, the artists involved with the *Today* newspaper, declined to participate; as did we in the Wessex Skeptics. We decided, however, to drop by the site the next day and savour the atmosphere. It was worth it. For the organisers, the competition backfired in almost every possible way. The hoaxers did supremely well. Hardly any noise or light, for which points would have been deducted, had been generated by the twelve teams. From the air, many of the patterns were exquisite. The mutterings of one or two researchers to the effect that the patterns of swirled crop were, er ... sort of, er ... too 'mechanical', were belied by the dark expressions of those who sensed the hoaxers had done too well for the cerealogists' good. To top it all off, the coverage in the press—the cerealogical equivalent of the scientific literature—was skeptical and unsympathetic; rationalising cerealogical comment was conspicuously absent.

Still, the day was not a total disaster. Many cerealogists were able to gather their dowsing rods and stride purposely off to see the 'real' circle that had appeared in a nearby field, dismissing all this hoaxing business, which no *serious* scientist takes seriously anyhow. My enduring memory will be of a green cerealogist who, after berating human beings for all the ills they had visited on Mother Earth, said that, if people *were* making all the circles ... well, that was just bloody *typical*.

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Robin Allen is a member of the Wessex Skeptics

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*The devilishly difficult design that the hoaxers were challenged to duplicate.*

# Psychic Diary

Toby Howard

*A postmodern saviour?*

EVERY SO OFTEN, an advertisement appears in the personal ads of *The Guardian*, announcing a meeting: 'Lecture by Benjamin Creme on the emergence of MAITREYA—THE WORLD TEACHER.' Since 1977, the Esoteric Master Maitreya has been promised as the new Saviour of the Age of Aquarius, to rescue our delicately crumbling shabby postmodern culture from the imminent self-destruction New Agers have been prophesying since the sixties.

Who exactly is this Maitreya? Basically, He is an all-purpose, multi-denominational, cross-cultural, one-size-fits-all, one-stop-shopping, saviour. When He appears in the world, Christians will see him as Christ, to Jews he will be Messiah, Buddha to Buddhists, the Imam Mahdi to Muslims, and so on. As *The Emergence*, the free monthly newsletter published by the Tara Center, says, He is 'the same One: the World Teacher, whose personal name is Maitreya. He returns now, at the beginning of the Age of Aquarius, as the teacher and guide for those of every religion and those of no religion.'

According to a report in *The Guardian* of 11 June 1988, Maitreya's actual arrival in our world is not a matter of mere speculation. He's already here, and on 11 June 1988 actually appeared to a crowd of thousands in Nairobi. Mr Job Mutungi, editor of the Swahili edition of the *Kenya Times*, was an eye-witness to this event, and he was clearly impressed by what he saw: 'I am convinced this was a miracle' he is reported as saying. 'I saw a bright star in daytime thrice. This person appeared mysterious to the crowd, and He had a light around His head and sparks came from His feet. He promised to return with a bucketful of blessings. He blessed the crowd in Swahili, muttered a Hebrew curse, and left in a car driven by a Mr Gurnam Singh'. I suppose even World Teachers have to get from A to B, but someone is going to get a shock when Mr Singh next says 'You'll never guess who I had in the back of the taxi last week, guv'nor'.

Maitreya's principal earthbound spokesman is London-based artist Benjamin Creme, who has had a lifelong interest in esoteric philosophy. It was in 1952 that he received his first telepathic message 'from his Master, a member of the spiritual Hierarchy, an event which came as a complete surprise to him.' Since then Creme has devoted his life to spreading the word of Maitreya, in an exhaustive schedule of meetings and lectures around the world.

Creme started to speak publicly about the impending emergence of Maitreya in 1975. In July of 1977 Maitreya descended from his ancient retreat in the Himalayas to live



*Maitreya, as He is alleged to have appeared to a crowd of thousands in Nairobi on 11 June 1988*

amongst the Asian community of London. In May 1982 Creme announced at a press conference that Maitreya was living the life of an ordinary man in London. Unfortunately, the world's media did not respond to Creme's challenge that they invite Maitreya to come forward. In 1988 Maitreya began to appear in various countries, in person and in dreams to political leaders. Manifestations of crosses of light in the sky were reported, and June saw Maitreya's alleged appearance in Nairobi. Apparently, Maitreya changes His form when He appears to individuals, choosing the most appropriate form for the—for want of a better word—contactee to recognise Maitreya as the 'One Teacher'.

It would be easy to present the Maitreya saga in such a way that it appears ludicrous, but this would be iniquitous. People like Benjamin Creme who believe sincerely in what they do, and act with the highest of motives, deserve respect—with the proviso, of course, that respect does not necessarily imply that one has to swallow everything someone says. Some may wish to 'debunk' Creme and his claims of an esoteric being's descent from the Himalayas to one day appear simultaneously on TV screens worldwide, and to deliver His message to us all telepathically. But this would be to miss the point. The Creme/Maitreya phenomenon is a fascinating self-consistent belief system, and offers much scope for analysis from mystical, sociological and psychological points of view, to name but a few.

Maybe Maitreya *is* waiting in the wings, ready to complete His long-awaited emergence in a flash of world-saving energy, to present his gift of enlightenment and liberation—Hebrew curses and all—to mankind. But there are many who prefer not to have their deliverance arranged by Higher Beings, and who would rather try to solve their problems—and those of the world—themselves.

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Toby Howard is a lecturer in Computer Graphics at the University of Manchester.

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# Skeptic at Large

Wendy M Grossman

*Hue and cry*

**A** WHILE BACK—August 1991—I did a piece for *The Guardian* on astrology and women's magazines. Why, I seem to remember asking, do all these magazines have astrology columns but none science columns (since then I've heard that the UK edition of *Family Circle* has started carrying such a column), and why do they all promote alternative therapies with such credulity? Part of the answer is that the astrology page sells ads; part of the answer may also be that such magazines' editors themselves read such magazines and think it's just the way things are. The editors I interviewed were divided: one believed in the claims; the other didn't believe but thought it was tremendous fun.

Still, grown women have a choice, and presumably some experience with which to make that choice. Kids have less—and as everyone knows, it pays to grab them young. I was a little startled when, on my last trip to the US, my friends' 12-year-old called out from the back seat of the car, 'What's your favourite colour?' I told her, and she proceeded to read me a personality description.

In case you're wondering, I'm 'steady, dependable and persistent'. 'You may,' the description continues, 'You may have to work hard at school, but because you put in the effort, you usually get good grades. You may not have a lot of close friends, but the ones you do have are always loyal and longstanding. When light [colour] is your colour choice, you're also creative, imaginative and sensitive.' Naturally, I prefer the more intense shades. So I'm not sensitive, creative, or imaginative. Well, we all knew I was insensitive.

My 12-year-old friend's mother tells me that some of the colour descriptions are recognisable. The one for green, for example, which says it's not a colour to be taken seriously and shouldn't be worn when applying for a part-time job or asking for an extension on your homework, comes, according to her, more or less directly from John Molloy's *Dress for Success*, published in the mid 1970s. The description for brown says that it shows you're dependable, friendly, and approachable; this does not come from Molloy's book, which favoured dark blue and grey suits. My friend's mom knows of a job applicant who was turned down for wearing a brown suit, on the grounds that only losers would wear such a thing.

Most of the other stuff is fairly standard: black is mysterious, blue is sincere and calming, orange is an attention-getter ('but don't be surprised if people don't take you too seriously when you wear this colour'), and pink means

you're romantic. To round things out, purple is spiritual (what, not royal?), white means you're an individualist and red is dynamic. One presumes that the next step is colour therapy: you wear the opposite of the colours you like so you acquire the opposing personality characteristics and become a more complete person.

Does it matter if magazines aimed at teenaged girls print this sort of stuff? I have to say, probably not. I don't like it, of course. But it won't seriously damage anyone to know what our cultural prejudices are about certain colours—although it would be better if the magazine explained that was what they were, prejudices, rather than portraying these descriptions as if they were independent facts.

Far more damaging, it seems to me, is the emphasis on being thin, attractive to boys, and feminine in the traditional sense of the word. Here you will find 15-year-olds telling other 15-year-olds sententiously that the reason they're attractive to boys is that they don't swear ('it's not feminine'). Things have improved somewhat, however, since the 1950s; one 18-year-old even says it's OK to act like you're smart.

The grown-up women's magazines are, of course, not much better, however much the more contemporary ones want to 'empower' their readers. My friend's mother's current issue of *Women's Day* has an angry little story about a woman who wrote a murder mystery, and whose daughter was later murdered. The writer found all sorts of match-ups between the fictional murder and the real one; when she consulted researchers Marcello Truzzi and Dr William Roll, they told her she had experienced precognition. In fact, many of the 'persuasive' coincidences she cites are unsurprising; she seems to have simply been unable to accept it when the police told her the murder was unsolvable.

Looking at these women's and teen girls' magazines is depressing. It wouldn't be so bad if you could say that it showed contempt for the female sex on the part of editors and (mostly male) publishers. Sadly, that's not the case; if it were, the magazines wouldn't sell in the millions they do.

Small wonder that one male (skeptical) friend commented, 'Women's magazines really let women down. If women want us to take them seriously, they've got to stop reading this crap.'

PS: My colour was blue.

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Wendy Grossman is the founder of *The Skeptic*, a member of the UK Skeptics, and a writer and folksinger. Her Compuserve ID is 70007,5537.

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## Reviews

### Numbers Up

John Allen Paulos, *Beyond Numeracy: An Uncommon Dictionary of Mathematics* (Viking, 1991, 285pp., hbk, £16.99); Lilla Bek and Robert Holden, *What Number Are You?* (Aquarian, 1992, 205pp., pbk, £5.99)

Whether we care for it or not, it is an inescapable fact that numbers affect almost every aspect of our lives. Consider some of the things we count: time, money, children, votes, birthdays, calories, war casualties, hospital waiting lists. The digits we learn: bank accounts, telephone numbers, PINs, social security numbers. The numbers we, and our computers, manipulate: measurements, estimates, map references, salaries, bills. With this in mind, it is a frightening fact that for many people, numbers actually have them completely stumped.

*Beyond Numeracy: An Uncommon Dictionary of Mathematics* is John Allen Paulos's latest book about numbers, and he begins where he left off in his previous *Innumeracy*. Here, he takes us on an alphabetical tour of a broad range of more than seventy mathematical topics, giving a short essay on each. Here is a random sample of ten: Arabic Numerals, Binary Codes and Numbers,  $e$ , Fermat's Last Theorem, Fractals, Humour and Mathematics,  $\pi$ , Statistics, Topology, and Voting Systems. *Beyond Numeracy* is a beautiful book which will thrill and entertain anyone who is curious about numbers. But don't be afraid—Paulos is a genuine enthusiast. He writes clearly and wittily, and works hard to express difficult ideas in terms the layperson (and the more experienced reader) can appreciate. At a time when the media tells us that 'science' and 'the humanities' are two mutually exclusive and utterly irreconcilable disciplines, it is a pleasure to see Paulos not only bridging the gap, but making a persuasive case that the gap needn't even exist at all.

I wonder what views Paulos holds about numerology, the pseudoscience of associating and computing numerical values with names and birthdates, and deriving mystic and predictive significance from the numbers so chosen. The authors of *What Number Are You?* (the companion volume to their *What Colour Are You?*, it says here) are firm believers in the efficacy of numerology, as a way of finding out more about yourself and your life. It is possible, of course, that they may be quite right, and while I was fascinated to read their book, I cannot say it persuaded me to their ideas one jot. They make great play of the use of numerology throughout history, but... so what? It is quite possible for us to be wrong, and to be wrong consistently, regardless of the century we happen to find ourselves in. Although the book is littered with a wide range of interesting references, taking

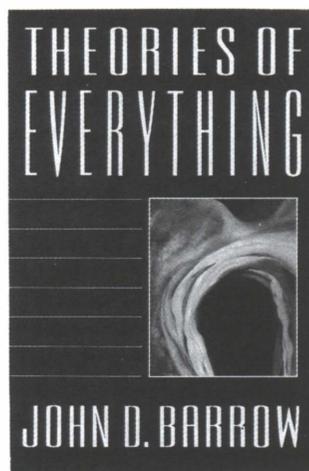
in quantum mechanics, DNA, Shakespeare, the Koran, Taoism, and, naturally, the Qabalah, I felt at the end that I had been taken on a journey of uncritical sightseeing, not genuine discovery.

Such may be the state of modern publishing, but it saddens me that this flimsy book is almost one-third the price of Paulos's important authoritative work, and that it will, I suspect, receive a far wider promotion and audience in the popular 'New Age' sections of our country's bookshops. If you can afford it, buy Paulos's book, and really find out about the magic of numbers.

—Les Francis

### Life, the Universe and...

John D. Barrow, *Theories of Everything: the Quest for Ultimate Explanation* (Clarendon Press, 1991, 217 pp., £14.95)



A couple of pages in, and I knew that I had been right in agreeing to review it. Fifty pages later, and I was actively making excuses to read further when I should have been getting on with something else (a far cry from what usually happens with books nearer my subject area).

The idea of an all-encompassing theory which summarises the laws of weak, strong, gravitational and electromagnetic forces has fascinated the professional physicist and dabbling amateur alike for ages. Its final form, if there is one, will be the closest thing to a scientific 'meaning' for the universe. However, I, for one, would not expect to comprehend the mathematics which must inevitably be involved. This book was ideal for a reader like me, talking at just the right level, hinting at the mathematics and philosophy behind each point without troubling me with the detail. I doubt, though, that I would have absorbed much had I not been at least acquainted with such notions as expanding universes, relativistic curvatures of space, wave equations, and quantum tunnelling. A diet of beginner's guides to astronomy and relativity, of the ilk of *All About the Universe*

(Dietz 1966), *Relativity for the Layman* (Coleman, 1954), and various editions of *Horizon* (BBC-TV), would seem to be minimum prerequisites. Very much like an *Horizon* broadcast, this book is a good, abstract, but thought-provoking read for the informed layman.

The author, in good scientific writing style, managed admirably to maintain an honest, objective stance, whilst still displaying an enormous passion for it all. Even the subject of religion receives the same agnostic treatment as other favoured and unfavoured ideas. Indeed, the quest for an all-embracing theory necessitates interrogating everything in the known universe for whatever evidence it has to contribute to the investigation. Physics, astronomy and mathematics obviously have central roles, but so too do chemistry, biology, philosophy, literature and religion. They all shed light on how the universe appears to human observers. This is a two-way process, so once the theory falls into shape, it will have implications for how we then view physics, mathematics, philosophy, literature and religion, and hence the title of the book.

However, though the initial version of the theory will be deep (enough to appear on student tee-shirts), it will not be very broad. Many simplifying assumptions will have been made in its formulation; whilst having implications for everything, it will, in fact, say very little about anything. It is tempting to believe that the laws of biology can be derived from those of chemistry, and in turn from those of the sub-atomic particles; but at each level, simplifying assumptions are necessary to make the model tractable, and these tend to omit behaviours which are too improbable, or too difficult to analyse with current tools. The whole point of a complex system is that its molecules (and hence its atoms and particles) have been organised in a very unlikely way, often precisely to harness some of the most bizarre effects of nature. Therefore, the laws which describe the behaviour of a complex system usually lie outside the conditions which make the presently known laws of the next level down applicable to them. Of all the problems faced in developing the theory, though, the most serious is that of untangling the laws themselves from the knock-on effects of their original initial conditions, given that we only have the final conditions available for study.

Something which the author managed to do well, was to set his reader up (me, anyway) to anticipate some of his arguments. Quite often I found myself thinking, 'Ah but, there is so-and-so as well', only to find the author confirming it a page or chapter later. This gives the reader the gratifying feeling of, in some way, participating in the argument, somewhat like the experience of attending a seminar. Disappointingly, he did not pick up my question, 'surely the laws *are* just another one of the initial conditions?' Maybe I needed a seminar after all.

I found the illustrations irritatingly weak: too few to break up the text, and sometimes too stark to justify study. I very much enjoyed reading the text, though, and have learned much of interest. Though I doubt that I will have much cause to pick it out to read again, the grand claim of its title looks impressive, especially on my shelves alongside my copy of Dietz.

—Malcolm Shute

## Grounds for belief

John Ziman, *Reliable Knowledge: An Exploration of the Grounds for Belief in Science* (Canto, 1991, 198pp., pbk)

Should we believe in the findings of science? 'Discoveries' such as 'Piltdown Man' or fusion in a test-tube have after examination turned out to be crude hoaxes or experimental errors. Whilst test-tube energy was discounted in a matter of months, it took the scientific community nearly forty years to realise that 'Piltdown Man' was indeed a hoax. How many other accepted scientific works will later turn out to be incorrect?

In order to answer these questions Ziman moves from the playing field of his native subject, physics, to the stands. He then gives the equivalent of a running commentary on 'the workings of the social model of science' using examples mainly from the natural sciences, such as physics and chemistry. As the book progresses, more and more questions are put to the reader with fewer and fewer concrete answers, as one might expect from a philosophical document of this genre.

How do scientists talk to one another about their work? Scientific knowledge is established by consensus. To achieve a consensus one has to have an unambiguous form of communication. 'Mathematics... it is the ideal vehicle for precise intersubjective communication... however it has very limited descriptive powers.' How do scientists propose and establish new theories? 'The consensus principle implies that the validation of theoretical models be fully public and cannot be accepted on the authority of any one scientist'. A new theory or proposal is rarely confirmed via experimental evidence, but left to appraisal by fellow scientists. Is modern science becoming overly complicated? Scientific knowledge is still, as it always has been, accumulated via the senses. However the apparatus used by Rutherford to 'split the atom' was so simple that it could be made by a skilled craftsman. Today the apparatus at CERN for essentially the same type of experiment occupies several square kilometres over and under the Franco-Swiss border.

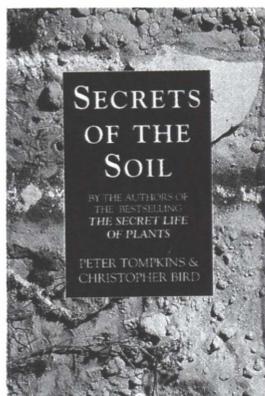
When scientists have a picture of the world how do they represent it? They use maps, not necessarily in the same form as say a motorway map, but essentially representations of what they observe. All people make mistakes 'neither the logic of unambiguous communication, nor mechanical instrumentation, nor ideal norms of scientific research can save us from uncertainty or error in the way we picture the world about us'. Do the same methods of scientific investigation and communication apply to the social sciences? Ziman thinks not. Though here one has the impression that the author is caught in the same mire as the social scientists that he observes that is, a grey area which cannot be substantiated through experimentation and validation.

John Ziman's book certainly makes evocative reading for those people practising or interested in science or the philosophy of science. The layman I feel would soon be lost in this book which still has the form and feel of a scientific paper with references to a vast variety of other work.

—Phillip Williams

## Beliefs for the ground

Peter Tompkins and Christopher Bird, *Secrets of the Soil* (Arkana, 1992, 444pp., pbk, £12.99)



I am an experienced and committed organic gardener. I know from personal trial and error that to eat well I must feed my soil, not my plants, and that most garden fauna and micro-fauna are my allies, not my enemies. There are many paragraphs in this book, and sometimes whole pages, which I would happily write myself. It is therefore

all the more depressing to find these principles entangled with claims for homeopathic and 'biodynamic' gardening which seriously strain credulity, at best.

Tompkins and Bird are the authors of *The Secret Life of Plants*, and those who know that book will not be surprised by this one. In its opening scene, on the day of the winter solstice, six people are sitting in a circle 'stuffing freshly gathered cow manure into desiccated cow horns'. The horns are to be buried for the winter so that 'cosmic and telluric forces' can 'transmute' the manure. The resulting substance, in minute quantities, is to be stirred into water for an hour, twenty seconds in one direction and twenty seconds in the other, setting up an alternation of vortices and chaos through which the mixture will be 'potentised with the required forces of the cosmos'. This is one of the 'biodynamic' 'preparations' devised by the 'clairvoyant Austrian scientist' Rudolf Steiner, by which soil, plants, and animals can be restored to health, happiness, and seemingly magical rates of growth—although all the preparations have undergone 'rigorous scientific testing'.

The book is insistently anecdotal. The authors travel to biodynamic farms around the world: herbs in Virginia, a 'training farm' in Pennsylvania, cattle, fruit, rice and sugarcane in Australia, cattle and wheat in North Dakota. The men who welcome them are 'kindly', 'reflective', 'outgoing', and make expansive gestures across the fields they have reclaimed from toxic desolation by Steiner's preparations. The women are 'cheerful', 'petite', 'attractive', serve home-cooked organic meals, and 'look like an Andrew Wyeth painting'. Steiner's precepts and their effects are narrated in the quoted conversations of these sane, good people.

Then the trail begins to range more widely. To Hunza, the original Shangri-La, high in the Himalayas, where the local people enjoy astonishing health and long life because the water contains a rich colloidal suspension of minerals. To the Soviet Union and the Amazon jungle for evidence of the power of chelation in making minerals available for absorption. To Florida and to Mexico, where citrus and vegetable crops are boosted by 'Sonic Bloom', playing music to them based on birdsong or Indian ragas or J S Bach. The value of weeds, the greenhouse effect, rescuing dying

forest from the effects of acid rain by mulching with ground glacial rock dust in Germany, and eventually outright telepathy, astral travelling, and the broadcasting of cosmic powers through networks of ancient stone towers in Ireland, copied using drainpipes on native American reservations—which might seem to have relatively little to do with soil. The 'Epilogue', where one might have hoped for a summary and some reflections on this diverse collection, instead introduces a Russian woman who, by thinking down a telephone line at wads of cotton wool, makes them able to restore the functioning of broken machinery and computers. The appendixes (sic) give a history of the Theosophical Society, anthroposophy, and the like.

Altogether, a miscellany of stereotyped improbabilities, destined to become a classic of New Age literature. (Incidentally, I was also horrified by the cover price—twice what I would expect for a book of this size and paper quality.) But please, don't let it put you off plain farmyard manure and earthworms.

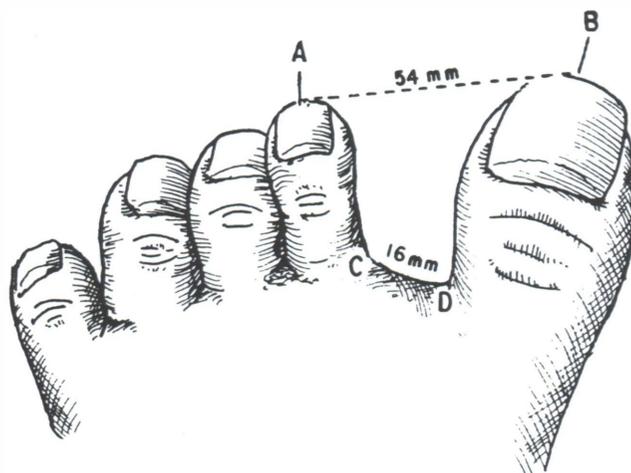
—Mary McGee Wood

## Odd bods

William R Corliss (Editor), *Biological Anomalies: Humans-1* (The Sourcebook Project, PO Box 107, Glen Arm, MD 21057, USA, 1992, 304pp., hbk, \$19.95)

If you ever want to talk about anything ordinary, don't talk to William Corliss. He won't be interested. Corliss is the driving force behind the ambitious 'Sourcebook Project', which aims to 'classify the unclassified residuum'. The flavour of what the project is all about is expressed well in the words of the American philosopher William James:

Round about the accredited and orderly facts of every science there ever floats a sort of dust-cloud of exceptional observations, of occurrences minute and irregular and seldom met with, which it always proves more easy to ignore than to attend to ... anyone will renovate his science who will steadily look after the irregular phenomena. And when the science is renewed, its new formulas often have more of the exceptions in them than of what were supposed to be the rules.



The distance between the first and second toes of some Asians is unusually great

Corliss's mission is to collect together reports of phenomena which don't tally with our currently accepted knowledge, and to do so in an unsensational, unjudgmental manner. Although almost all these reports have previously appeared tucked away in 'respectable' scientific journals and publications, Corliss knows that he is working in a world of extremes: many of the strange 'facts' he lists are likely to be laughed at, but some may open up whole new fields of research. With this in mind, he assigns two scores to each report based on scales of 'Data Evaluation' and 'Anomaly Evaluation'. As well as the growing catalogue of 'Sourcebook' volumes, Corliss also produces a regular 'Science Frontiers' newsletter that lists his latest pickings.

The book to hand, *Biological Anomalies*, is the twelfth volume in the 'Catalogue of Anomalies' series, and is the first of three projected volumes devoted to human anomalies. There are things in here that will make your hair stand on end. In fact, one gentleman can reportedly cause the hair on his arms to do just this at will. There are reports of excessively hairy humans, hair that continues to grow after death, hair that spontaneously changes colour, hair that completely falls out and then grows again, hair that grows in strange patterns, correlations between baldness and musicianship...

And that's just hair. The book is mind-boggling in its coverage. Think of anything about your body, and you'll find here pages and pages of strange reports that will make the average freak show (if they still exist) look positively pedestrian. Teeth that shrink, natural human vibrations, people who are spotted, odiferous forearms, reports of visible auras, human horns, unusual foot and toe shapes, natural human navigation, unusual locations of breasts, human tails, webbed hands...

If you like to walk off the beaten track, have an interest in the evolutionary reasons for altruism, or that some people appear to have an innate ability or tell the sex of newly-born chickens, then this book is for you.

—John Yates

## Hi! My name's Nah-9!

Janet and Colin Bord, *Life Beyond Planet Earth? Man's Contact with Space People*, Grafton, 1992, 240pp., pbk, £6.99

As someone remarked in a recent issue of *The Skeptic*, the most interesting thing about ufology is not so much the elusive space ships, nor the even more elusive alien spacemen, but *us*, the humans. Read a contactee story and you're probably going to find out a lot more about the contactee than the representative of whichever alien race happened to be cruising Planet Earth that day.

The Big Question of whether there is life beyond Earth is, of course, currently unanswered, according to that boring lot, the scientists. They'll give you some interesting probabilities, and speculate till the pens in their lab coat top pockets run dry, but while everyone will agree that there's certainly ladles of organic soup floating around out there amongst the stars, there's no hard evidence one way or another for intelligent life in space. I don't believe that 50-



Forean Picture Library

Visitor from Venus: Valliant Thor (right)

plus years of ufology has helped much. My faith remains with the radio telescopes.

However, according to Janet and Colin Bord, ufology does have a useful role to play in trying to answer the Big Question. In *Life Beyond Planet Earth?*, the Bords dig deep into the archives of ufology and present a fascinating—and almost endless—collection of reports of people who have contacted space-people. We have personal contacts, communication by telepathy, aliens broadcasting to us on the radio, breaking into TV transmissions (Gramaha of Astra Galactic Command interrupted Southern TV news on 26 November 1977), aliens who use mediums and channelling, and, I suppose as an absolutely last resort ... ringing us up. The account of the phone calls Arthur Shuttlewood shared with Caellsan, Selork and Traellison (from the planet Aestria, but calling from a local phone box) is absolutely hilarious, and worth the price of the book alone.

The Bords present their stories with straight faces, and keep value judgments to a bare minimum. At first, I appreciated this fair-minded approach, but as I read further it became increasingly frustrating. No matter how honourable the intention, there comes a point after which to remain resolutely fair-minded is to become ludicrous. Reading, for example, the story of Valiant Thor, a gentleman who—it is claimed—was a Venusian living amongst us on Earth, one look at the accompanying photograph of the dapper fellow with the short-back-and-sides and nice watch was enough to convince me that this particular being was definitely *not* from a world with a surface temperature of 480 °C, and an air of sulphuric acid at a pressure of 90 atmospheres. In this instance, and in reporting equally preposterous rubbish, a bit of humour, and—dare I say it—raw skepticism, on the part of the authors would have helped.

While I cannot agree with the Bords' unconvincing conclusions, I heartily enjoyed this well-written and illustrated book, and happily recommend it to anyone interested in ufology and its star players—*ourselves*.

—Edward Smith



# Letters

## On the wrong track

I would like to thank your *Psychic Diarist* for his recent article on 'Mirror Talk'—the supposed belief that hidden backwards messages appear subconsciously within everyday conversations (*The Skeptic*, 6.3). The article went on to discuss the deliberate use of time-reversed messages in certain music recordings.

I had noticed many years ago the inclusion of backwards speech in Pink Floyd's album 'The Wall', and have always wanted to find out what was said ('Congratulations, you have just discovered the secret message', according to the article). However, readers who are interested in hearing this message should listen to the introductory bars of the song 'Empty Spaces', not the track 'Goodbye Blue Sky', as stated in *Psychic Diary*.

**R Mortimer  
Manchester**

## Grounds for complaint

Why does *The Skeptic* bother with UFOs, astrology and Loch Ness monsters, when no self-respecting sceptic has any interest in such things? The purpose cannot be to sever feeble minds from harmless fantasies because believers never read *The Skeptic*. In any case such fantasies do less harm than smoking, and are even less idiotic than certain scientific concepts. So what motivates the sceptic? Are his myth-slaying forays a reaction to childhood fears of the dark, Santa Claus deceptions, and grim lectures on God and the Devil?

To disparage others without cause is to indulge in childish tantrums. Uri Geller has never harmed anybody, and never been found guilty of fraud even by scientists; yet sceptics have hounded him shamefully over the years. When at last he turns on his tormentors, they squeal for help. Geller's curved spoons are more open

to inspection than Einstein's curved space. Scientists who regurgitated a farcical aether have achieved the amazing feat of swallowing curved space without getting it fast in their throats. Shades of phlogiston.

Before deciding to shut down *The Skeptic*, consider expanding its readership by investigating scientific claims to the paranormal.

**Tom Banner  
Surrey**

## Similar statements

In his review of Robert Hicks' *In Pursuit of Satan: The Police and the Occult*, (*The Skeptic*, 6.2) Keith Pringle has doubts about the accuracy of the book because Hicks has the facts wrong in the Cleveland affair. Altogether this is a passage of five lines and a literal quote on a UK affair, written by a US investigator, and the reviewer does not explain exactly which facts are wrong. Also, Finkelhorn's book *Nursery Crimes* is said to be a central target for Hicks' criticism. This is on pages 241–244, roughly in the middle of the book. Well, one could call that central. I haven't read Finkelhorn, but Hicks gave me the impression that ritualistic abuse (45 'substantiated' cases in 120,000 cases in all) is a side issue in *Nursery Crimes*. Hicks disputes that those 45 cases are really substantiated.

The review states that is not clear what the book is about. Well, I thought that it was about the extensive efforts of the US police to find Satan where he is not—roughly what the title says. Mr Pringle says that similar statements ('sexual abuse doesn't exist') turned out to be wrong in the past, and asks rhetorically 'Will we have made the same realisation about "Satanic" abuse in 2002?' The 'similar statement game' can be played both ways. This argument is

similar to the arguments deployed by believers in pseudo-science and the paranormal. People laughed at the Wright brothers, so why do you laugh at TM levitation? Scientists did not believe in meteors, they were wrong then, so they might be wrong now, not believing UFOs are extraterrestrial spaceships. If in the next century homeopathy will be scientifically proved, what are you going to say now?

Sexual and other abuse of children is not unknown, even though some people (unspecified by the reviewer) have underestimated its prevalence. Those who believe in 'ritualistic abuse' do not merely think that isolated Jack-the-Ripper types are using gowns and candles rather than more conventional sado-masochistic trappings. No, they believe in the existence of a widespread organised religion that is dedicated to committing wholesale torture and slaughter, and that knows how to force their victims small and large and their own adherents into almost absolute secrecy. Let's play 'similar statement' a bit more. Similar beliefs in the international Jewish conspiracy have turned out to be wrong, but not before the terrible consequences of such beliefs had become clear. Similar fears that homosexuality or masturbation are evil or bad for your health or both have made life quite miserable for many people, and those fears were quite wrong.

Hicks signals how easily these beliefs are espoused without solid evidence. He also explains how they can arise: just send a couple of hundred parents an official letter saying their child might have been abused and instruct them what 'signs' to look for. Then have a couple of credulous interrogators work on the kids. Success ensured. It also helps to believe stories of mentally disturbed people without bothering to investigate them. Given the real damage

these beliefs can do, the proofs that there is fire below all this ritualistic smoke should be better than 'they laughed at Galilei, and he was right too!'

The only complaint I have about Hicks' book is that the index (eight columns only) is much too small. Prometheus should tell its authors to make better indexes.

**Jan Nienhuys**  
Eindhoven  
The Netherlands

## Rubbish?

I was very surprised to find enclosed with the May/June issue a leaflet advertising publications available from something called Specialist Knowledge Services. What do you think you are doing publicising such dreadful rubbish?

I am *not* advocating censorship, *not* saying books of the kind advertised should be banned, *not* saying that this supplier should be prevented from advertising his wares; but I don't think a publication committed to rationalism should take part in publicising such things, and in any case I wouldn't have thought he would find many customers among your subscribers!

**Ray Ward**  
Sheffield

## UFO balloons

Dave Mitchell's article 'Do-it-yourself UFOs' (*The Skeptic*, 6.3) had a particular fascination for me, as I conducted similar gas-bag experiments in my youth. Initial attempts at rocketry resulted only in numerous launch-pad fires and one explosion. On turning to natural gas, success was immediately forthcoming. Unlike Dave I had problems with bags—ours were full of holes—but condoms were superb. The pressure in the gas mains is ample for expanding condoms to very large dimensions, and with a piece of string to tie the end one had a very buoyant 'balloon'.

This leads me to a variation of the

procedure which Dave does not mention—the use of the string as a fuse. By setting alight the end of the string, and by using a long enough length, the condom may attain an altitude of hundreds of metres before igniting in a brief burst of flame. On a dark night the sight of a moving point of light suddenly flaring up and then vanishing could easily have been taken for a UFO.

Although I was not aware of having triggered any 'sightings', the fact that the idea has occurred to at least three teenagers (a school-friend of mine had similar ideas but did not try them out) makes me wonder just how many of us have been (or are) at it, and just how many 'UFOs' are nothing more than schoolboy experiments.

**Stephen Moreton**

## NLP at large

I expect you'll get a few angry replies from Natural Law Party supporters (possibly). There were at least 7 constituencies where the NLP candidate did not come last: Manchester (Gorton), Richmond & Barnes, Cheltenham, Bristol West, Oxford East, Hampstead & Highgate, and Hammersmith. There may be more. They would have got many more votes had the voters exercised TM and levitated themselves to the polling stations!

**Chris Allan**  
Alsager

## Keeping standards

If *The Skeptic* is to merit credibility as a forum for the critical discussion of paranormal notions and claims, then its contributors and correspondents must be seen to adhere to high standards of objectivity, impartiality and informed scholarship. This periodical's achievements according to these criteria are consistent and impressive.

Unfortunately the same cannot be said when other contentious ideas, such as those from psychology and the social sciences, are discussed.

Recent correspondents in these columns who have belittled the concept of 'intelligence' and the value of intelligence tests have failed to support their assertions with balanced and informed argument or due reference to the vast theoretical and research literature on these subjects.

If these matters are to be debated in *The Skeptic*, let us insist on the same high standards as demanded for the discussion of paranormal ideas. Otherwise, they should be left alone.

**Michael Heap**  
Sheffield

## Philosophy of science

If Stuart Campbell is right in claiming (*Letters, The Skeptic* 6.3) that 'The current philosophy of science ... teaches that there are no facts and that nothing is actually known', then all that can be said in reply is: 'so much the worse for the current philosophy of science'!

The fallacy which afflicts much recent philosophy of science is essentially the Cartesian view that knowledge is possible only where it is inconceivable that there might be error. It owes much to one strand in the thought of Karl Popper, which was developed in ways that Popper himself disowned by Thomas Kuhn, Imre Lakatos and Paul Feyerabend. This pernicious tendency is well dissected in David Stove's book *Popper and After: Four Modern Irrationalists* (Pergamon, 1982). It is also ably opposed in several of Antony Flew's books, and perhaps the best short refutation is that given in Section 5 of Chapter 2 of *An Atheist's Values* by Richard Robinson (Oxford, 1964).

**Daniel O'Hara**  
London

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- 6 Creationism in Australia; Noah's Ark founders on the facts; Hunting Nessie;

### Volume 2 (1988)

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- 2 Doris Collins and the Sun; Paul Kurtz interview-1; State of the art; S.G. Soal: master of deception.
- 3 Findhorn, Paul Kurtz interview-2, The case against ESP, Telepathy: a mechanism? No!; Recognizing pseudoscience.
- 4 A Thorn in Geller's Side; UFO days; Comparative astrology; dreams and visions of survival.
- 5 Is there antibody there?; Dowsing; The saints and martyrs of parapsychology; UFO hunt.
- 6 Bristol psychic fair; The incredible Mr Newman; Predictions for 1989; Joe Nickell on the Shroud of Turin.

### Volume 3 (1989)

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