Volume III, No. 4 July/August 1989

The British & Irish SKEPTIC

A publication dedicated to the scientific examination of claims of the paranormal

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Two unpublished stories

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Editors: Dr Steve Donnelly and Toby Howard

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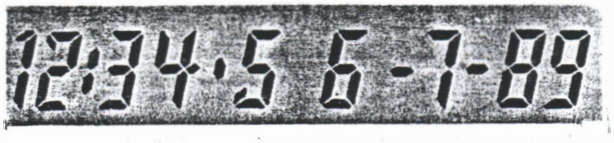
Hits and Misses

Steve Donnelly

Fairy Mushrooms

If you ever wondered about the origins of the Little People who inhabit Irish gardens, the *Sunday Telegraph* on 9 April shed some light on this mystery. According to art historian Anthony Weir, the leprechauns and fairies of Irish folk tales may owe more to the magic mushroom *psilocybe semilanceata* than to the magic toadstool ring. Until the turn of the century, claims Mr Weir, it was a popular habit in Ireland to sit in crude saunas (known somewhat unromantically as sweathouses) and enjoy the effects of the illegal hallucinogenic fungus. He feels it highly implausible that members of an extremely poor society would devote so much time and energy (it took two days to fire up the peat) to merely sweating out their arthritis, and much prefers the idea of hot, stoned Gaels sitting round conjuring up psychedelic visions of the Wee Folk.

Magic Moment



You may have been entirely unaware of the event but the psychic moment of your life took place at lunchtime on 6 July. Unless you're American, that is. The *Sun* on that date reported, in a full page spread, that 'at 5 seconds past 12.34 the time will read: 12.34.5 6-7-89.' (Not on my digital watch it won't! The best I could do was 12.34.05 6-7-89). It is patently obvious that such an amazing sequence of numbers must have cosmic significance, particularly since 'you will have to wait 100 years until the year 2089, before it happens again'. (Okay, so 12.34.56 7-8-90 will occur next year but this is a bit complicated for a *Sun* journalist). The newspaper in its inimitable fashion called its 'world famous psychic, Doris Collins' out of retirement to give its readers (or, at least, the people who look at the pictures) maximum benefit from this deeply spiritual moment. Readers were urged to gaze deeply into the eyes of a large photograph of Doris reproduced in the newspaper (it was probably better to have done this before eating a heavy lunch) at 12.34 05 exactly, to pick up the psychic energy beamed out by the media's favourite medium. Anyone having an 'out-of-this-world experience' was exhorted to phone the newspaper's psychic hotline and relate his experiences. Unsurprisingly, the *Sun* the following day carried phoned-in stories of, amongst other things, the resolving of a passport mix-up in Sri Lanka, a successful job application and the appearance of a ghostly mother-in-law. Apparently the several million *Sun* readers who didn't have a psychic experience didn't bother to ring in. And why were our transatlantic cousins excluded from this experience of a lifetime? Because in the USA on this date and at the correct moment (local time) the time would have read 12.34 5 7-6-89!

Pupils Fail the Test

A recent article in the *Journal of Alternative & Complementary Medicine* (May 1989) will perhaps serve to answer some of the questions posed by Hocus Pocus elsewhere in this issue. The article, by Simon Martin, looked at a recent test of the validity of iridology, the results of which were published in the *British Medical Journal* at the end of last year. The research, by Professor Paul Knipschild who is head of epidemiology at the University of Limburg in Maastricht, The Netherlands, aimed at determining the ability of iridologists to detect patients with gall bladder disease by examining colour slides of their irises. Stereo colour slides were made of the right eye of 39 patients the day before they were due to have their gall-bladders removed. These were mixed with an additional 39 slides of irises of patients who were healthy or who had 'unrelated' diseases and were examined by the five experienced iridologists, two of whom were medical doctors. The success rate in determining the sufferers from gall-bladder disease was at chance levels. According to Professor Knipschild: 'There is only one explanation for the low validity of the reviewers: iridology is not a valid test for diagnosing gall-bladder disease.' Predictably, British iridologists who were asked to comment on the results claimed that they would not expect gall-bladder disease to be diagnosed from the iris.

Golden Wave

New technology has opened up exciting new possibilities for the producers of personalized junk mail. My first experience of this was when living in Loyers, a tiny village in Belgium, a few years ago. A beautifully printed letter arrived, addressed to my wife and advertising an American business magazine. The letter read 'In the financial centres of the world, in New York and Paris in Loyers and London...' I'm sure the parish council would have been delighted to have learned of the high esteem in which they were held by the American business community.

British & Irish Skeptic reader Ian Saunders has sent me an example of this type of letter but in this

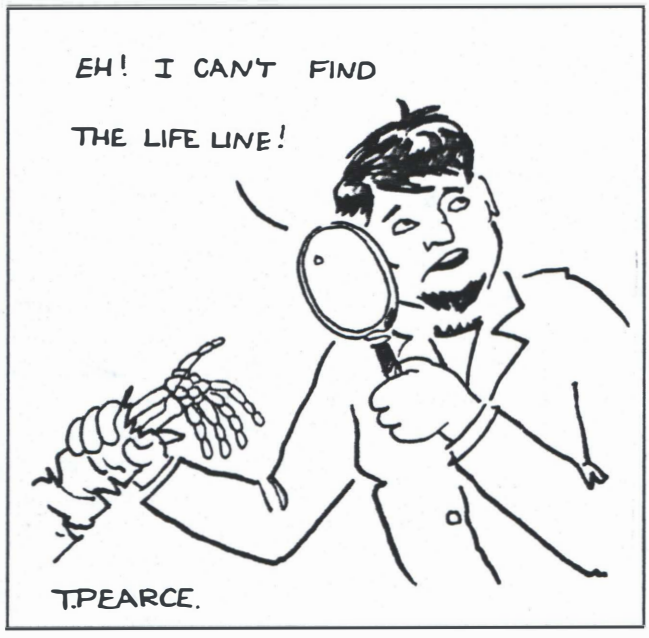
case from an American astrologer, Madame Daudet. It is apparently a follow-up letter, the previous one having been (wisely) ignored, as it begins: 'Is it possible my first letter to you got lost in the mail? It was so vitally important to both of us that I cannot believe that you overlooked it.' The letter which is printed in two colours on expensive looking pink paper goes on to reveal that 'YOU have entered the Golden Wave of your life. A highly favorable period, so rare and unique it qualifies as a special astrological event.' Other documentation with the letter makes the astounding declaration: 'Return my Personal Form now and you will receive my secret Golden Wave revelations with these promises: 1) MY PROMISE YOU WILL BE WEALTHY. You will attract huge amounts of money during your golden wave period. 2) MY PROMISE YOU WILL LOVE AND BE LOVED. You will attract the hearts of those you desire and care for as soon as you have arrived in your golden wave. 3) MY PROMISE YOU WILL BE HAPPY You will be drawn into a life of joy and contentment.' All the recipient has to do in return is sign an oath of secrecy... and, oh yes, send a cheque or credit card payment of £15!

A Thoroughly Modern Myth

Most regular readers of this magazine are probably skeptical about myths and legends such as the lost city of Atlantis or the Loch Ness monster, but legends can be much closer to home. As David Fisher wrote in a recent article, are you always 'really sure that the data (*on which you base your beliefs*) have trickled down... unpolluted from the ivory towers?' Hands up everyone who believed that the hurricane which devastated southern England in October 1987 led to a boom in births nine months later. This modern legend has it that, as the hurricane swept through the south of the country, couples awoke and comforted each other in the most natural way. The *Guardian* on 29 June, however, reveals that the Office of Population and Surveys has discovered that the biggest increase in births the following July was in Cumbria, a county unaffected by the storm. Almost all southern counties exhibited average or below average birth rates in this month. This particular myth is similar to the belief, held by many, that a big power cut in New York many years ago also led to a baby boom. According to the *Guardian* this story too is just a modern legend with no basis in fact.

On the Right Lines

Doctors from the Bristol Royal Infirmary recently hit on the bright idea of putting palm-reading to the test by comparing the life-lines and ages of 100 people who were undergoing post-mortem examinations. A relatively simple test you might think, liable to give clear cut results. Well the results may have been clear cut but if you happened to read accounts of the research in the *Daily Mail* on 17 June and the *Sunday Times* on the following day then you would have been very confused. The *Mail* quoted one of the pathologists involved in the test, Professor John Bradfield, as saying that the relationship between the length of the lifeline and the age at death was something that could be tested scientifically. 'But it didn't matter which hand was examined, the lifeline appeared to have no bearing on how long the patient had lived.' The *Times* on the other hand (groan!) claimed that the research had shown that 'the length of the life-line is an index of lifespan' and that 'people who had died younger usually had shorter lifelines than those who had lived to a great age'! Professor Bradfield was, however, quoted as saying 'But there were plenty of exceptions.' (Ninety-nine, perhaps?).



The *Skeptical Inquirer* sent a copy of the *Times* article to an American pathologist, Dr Jeff Myers to ask for his comments. He replied 'This appears to have been a retrospective study. Constant folding of the hand could extend the line over a lifetime. A prospective study would avoid this possibility. If anyone was willing to waste his time doing such a study and the results were the same I would believe them.' An editorial comment elsewhere in the journal, however, made the following commendable statement: 'If alternative medicine is to develop it has to allow its methods to be examined by critics and supporters alike. When results are poor, as in this case, we must obviously try to find explanations or simply accept that what we held to be true could be misguided. It would be of value to all concerned were iridologists to mount similar studies of their own, and to have independent monitoring and assessment of these.'

Dr Steve Donnelly is a physicist, a lecturer in electronic and electrical engineering, secretary of the Manchester Skeptics, and co-editor of the *British & Irish Skeptic*.

Cold fusion and pseudoscience

Dave Love

What lessons can we learn from the furore over cold fusion?

You've heard all the fuss recently about the claims to have observed 'cold fusion', and probably formed opinions about it. As it obviously has no direct connection with the paranormal you may be surprised to see an article on it in the *British & Irish Skeptic*. If you're not very charitable—and I'm not—you could see some more direct connection with pseudoscience, though, which *is* a concern of this journal. Anyway, I want to argue that the affair provides interesting parallels with typical pseudoscientific and paranormal claims, and a useful forum in which to re-examine our attitudes to extraordinary claims in a situation uncontaminated by the paranormal. We should be able to show even-handedness in dealing with such claims and justify our attitudes to the paranormal ones.

The claim to have produced lots of energy by inducing a nuclear fusion reaction (see box) essentially in a test-tube on a lab bench was announced by two chemists, Martin Fleischmann and Stanley Pons (henceforth 'F&P') at a press conference only a week before April 1. To physicists like me, it really is an extraordinary claim, probably on a par with Benveniste's, (see *Skeptical Inquirer* 13/2) and, by our usual dictum, demands extraordinary proof which has certainly not been forthcoming. Fusion is not *absolutely* forbidden at room temperature and pressure, due to quantum mechanical 'tunnelling', but the rate at which it would be expected to proceed is so vanishingly small that it just doesn't happen. If it did one might have expected it to have been observed in one of the very sensitive detector systems set up to observe rare nuclear decay processes. Chemistry *can* influence nuclear processes, but very different ones to fusion, and there is really no reason why passing a current through the apparatus should have any effect on the nuclear physics.

So let's examine various aspects of the affair and comment both from the point of view of whether they represent bad science and also their relationship to paranormal claims.

Perhaps the most obvious point is the manner in which the claim was made. Maybe a press conference is a suitable forum to announce the success of scientific work well-known to people in a field which has been aiming for a particular goal—say observation of the particles a new accelerator was built to produce. Even if such a result is controversial the background will be known and experts can evaluate it. Here, however, an extraordinary claim was made out of the blue with no information available for the scientific community to check it, and without having been through any sort of peer review. (Rumours of the Benveniste claims in the press was one reason given for publishing their paper so it was available for scientific scrutiny, despite the editor's grave misgivings about the results.) When a paper from F&P did appear it was in an obscure electrochemistry journal, unrefereed and hardly very enlightening about the details of the measurement. When copies finally made it to physics labs they were as illegible from multiple photocopying as they were disappointing in content. F&P failed in their scientific responsibility to make full details accessible to those in a position to check them—nuclear physicists. It is not uncommon for other such claims to appear in most inappropriate places; electrical/electronics journals seem favoured.

Any argument that such claims cannot get published in the appropriate journals doesn't hold up. F&P's paper was considered by *Nature* and only rejected because they would not respond to criticism by the referees. It is clear from editorials that the nature of the claim was not a cause for rejection per se. After all, you can find in past issues of *Nature* accounts of remote viewing, vindications of Uri Geller, homeopathy..., and Jones et al (another 'cold fusion' experimenter—see below) have had a cold fusion paper accepted. However, considerable caution in pub-

What is fusion?

In nuclear *fusion*, several light atomic nuclei fuse together to make a heavier nucleus. To get the nuclei close enough together for fusion to happen requires a huge amount of energy by everyday (chemical) standards. It happens in stars and in hydrogen bombs. Currently, researchers are using very large machines to generate immense temperatures and pressures to investigate using fusion to generate nuclear power.

In the 'cold fusion' case, the researchers claim to have achieved fusion *without* using enormous temperatures and pressures. They used an isotope of hydrogen called deuterium (or heavy hydrogen), the nucleus of which comprises one proton and one neutron. Two deuterium nuclei fuse to give tritium (even heavier hydrogen)—which has a proton and two neutrons in the nucleus—plus a free neutron, which can be detected when it interacts with water, producing characteristic gamma ray radiation.

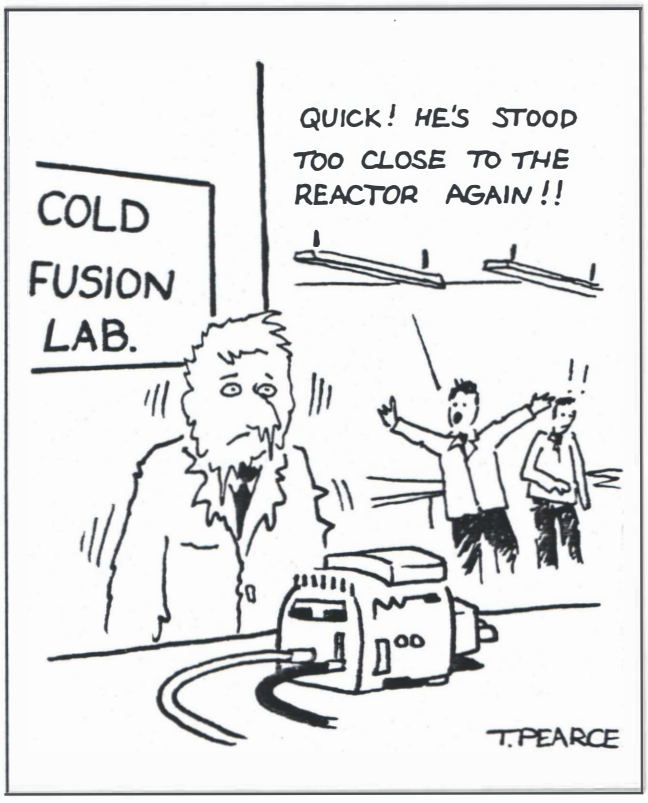
lishing such material becomes more understandable as more is shown to be quite wrong, and these cases demonstrate the value of peer review and proper exposure to the scientific process.

Claims of excess heat production are not very convincing, and F&P have tried to back them up with data on a nuclear physics signal of fusion: γ-rays with a specific energy. In this they are trying to make relatively hard nuclear physics measurements without experience. Their supposed data displayed in a critical article by Petrasso et al—where an unpublished spectrum was obtained from a TV recording!—are preposterous to an expert eye and, I suspect, to many non-expert ones. Various embarrassing examples of similar behaviour come to mind, such as physicists doing parapsychology without experimental psychology training. You can get all sorts of wonderful results from a bad enough experiment! On the other hand, experts doing better experiments have failed to get the same results and suggested serious problems with the original. Despite the initial flurry of supposed confirmations of F&P's result, the overwhelming body of evidence from similar experiments is negative. Compare Kammann and Marks' re-examination of remote viewing for a paranormal example (D.F. Marks and R. Kammann, *Psychology of the Psychic*).

Commonly with with psi and pseudoscience, obscure reasons are put forward afterwrods why other investigators haven't done the right thing, or the goalposts on the claim shift when close examination fails to substantiate it. The same is happening to some extent here when F&P say that other groups' apparatus doesn't work because their electrodes are made wrongly (despite at least one group's being á la F&P). Of course, if the original experiment was properly documented, there wouldn't be room for such manœuvering... The rather vague and unlikely physical mechanism proposed has a similar feel to that put forward by Benveniste, John Taylor's electromagnetic mechanism for the 'Geller phenomenon' and other explanations for unproven paranormal phenomena.

F&P have failed to run (or anyway report) a control experiment with ordinary rather than heavy water. This is a crucial test of their claims that nuclear physics is involved. If I were Robert Wood of 'N-ray' fame I'd make the substitution surreptitiously! Compare parapsychologists unwilling to submit to magicians' controls. It is quite irresponsible not to make such an obvious check.

Koonin, someone whose work I respect, has said that 'We're suffering from the incompetence and delusions of Professors Pons and Fleischmann.' This is surely a charge that could be levelled at many experimenters in paranormal and pseudoscientific areas, but not one that would often be voiced like that although I think it should be. Self-delusion is very much a hallmark of pseudoscience. If one feels the need to make the charge, it is useful to be able to point out that



paranormalists are not being singled out. A suitable recipient of such comments would be the Benveniste team, but you can pick your favourite discredited parapsychologist as well. Anyone trying to do experiments has to make very sure they do not delude themselves, otherwise they are being bad scientists—hence double-blind testing.

It is important in science to be quite honest both with oneself and one's colleagues, as Richard Feynman argued passionately. F&P have not been. At their first press conference, they claimed to have submitted a paper to *Nature* which would be published during May. Assuming this was correctly reported, it was a straightforward lie which does not give credence to anything else they tell us, whether scientific or not. Some of their data have apparently been admitted to be 'hypothetical' also. This encourages me to think uncharitably that they are quite so self-deluded. Once someone has been found out like that, you need very good reason to give them a second chance, although many supporters of psychics caught in fraud seem not to think so and being associated with similar claims does not necessarily seem to do as much damage to respected scientists as one might expect.

It is encumbent on makers of extraordinary claims, like scientists normally, to be *open* with their results, not just to refrain from dishonesty. It always rings alarm bells when you ask to see the original data upon which a claim is founded and aren't given the opportunity; why isn't the claimant proud of them? (I say this having been embarrassed once when I showed my data to a rival group and it became clear that the result from a recently-altered computer program used

in the analysis was inconsistent with what was on the paper in front of us; but I'd do it again.) F&P have been remarkably cagey about their data. Apart from not publishing a proper account of the experiment, they have refused offers of expertise from other groups to make important measurements on the system and refused invitations to defend themselves in front of skeptical audiences of knowledgeable physicists. Such reticence to provide original data and to defend it in front of skeptics is familiar in the paranormal world, even when a potentially testable claim is made.

Worryingly, F&P, backed by the the University of Utah and with the help of hired Capitol Hill lobbyists, are trying to persuade Congress to give them up to $25 million to further the 'research'. If awarded, this money could come out of the funds for research into viable routes to fusion, which is badly needed. I shall be reassured about the understanding of science and technology in the US if the money is refused, but have a nasty feeling that I won't be. We can be similarly concerned when, albeit smaller, sums are given for research into the paranormal in sterile fields that have no hard results after years of trying, when the money could be so much better spent on real science that produces hard results and often tangible benefits.

Jones' rival group provides an interesting contrast. Most of the criticism of F&P is not applicable to them. They have been quite cautious in their claims of an effect very different in magnitude, pushing it only as an interesting one that may explain a few anomalies and possibly provide a scientific tool. They have followed the usual route for publication of such work and been rewarded with a paper in the prestigious *Nature* which puts their case reasonably well and gives a certain amount of detail and corroboration. They seem amenable to other people checking the claimed neutron production from their cells. They appear to be much more experimentally competent, although I think the results are probably wrong. (Their technique is open to quite strong criticism, some of which could be quite easily sorted out.)

Not all scientists have behaved in this matter as one would have expected. Ian Fells, presenter of the worthy TV programme *Take Nobody's Word For It*, did take F&P's word for it when interviewed as the claim broke. However, reassuringly, the claim has been treated quite responsibly by the media on the whole and widely satirised. I only wish the same attitude was shown to other extraordinary claims. I hope some good has come out of the business on balance, but fear not. It has perhaps raised interest in scientific matters, but I think that was better done by the the possibility of room temperature superconductivity than room temperature fusion. The large amount of resources spent trying to reproduce the claim has not been very profitable and I think Joe Public will remember aspects of the affair that reflect badly on the scientific community rather than realising that the proper scientific approach is vindicated.

Postscript

Since this article was written there have been a number of developments on the 'cold fusion' scene. I am pleased to report that Congress has actually shown skepticism of the reports and looks highly unlikely to donate the requested money. My apologies for doubting them! An experiment which has got no attention in the popular scientific press, for some reason, really squashes the original idea of cold fusion and provides a fine example of experimental science to compare with F&P. It uses a different, much more sensitive and unambiguous type of measurement to rule out the effect at a level way below that claimed by Jones' group (J.F. Ziegler et al, *Physical Review Letters* **62** (1989) 2929).

There have been several other careful and unsuccessful attempts to reproduce the F&P and Jones results, the recently-terminated one at Harwell having got the most attention in the UK. F&P replied to the attack on their γ-ray spectrum and embarrassed themselves even further (*Nature* **339** (1989) 2929ff). The original claims really must be considered dead now, although there is speculation that bursts of neutrons could originate from fracturing of the metal samples producing a miniature solid-state particle accelerator, something I consider rather dubious. There has, at least, been one positive piece of science triggered by the affair, with Koonin re-calculating the nuclear and atomic physics of fusion at very low energies and finding that the previous theory was badly off—but not as way off as F&P.

Brief bibliography: M. Fleischmann and S. Pons, *J. Electroanalyt. Chem.*, **261** (1989) 301; *Science* **244** pp. 284, 420, 522, 647; R.D. Petrasso et al, *Nature* **339** (1989) 183; S.E. Jones et al, *Nature* **338** (1989) 737; *Nature* **338** p. 701, **339** pp. 4, 84

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Healing the family tree?

Anthony Garrett

Mention of 'psychic healer' Dr Kenneth McAll (it is an inaccurate description) in the *British & Irish Skeptic* (III.2) brings to mind his remarkable 1982 book *Healing The Family Tree.*[1] Remarkable, because it proposes a new theory of much mental illness, and because McAll's ideas on how to cure it may amount to an easy test of certain supernatural hypotheses.

McAll is no bandwagon New Ager or shallow TV evangelist. He has been involved with psychiatry for 34 years and with surgery for 20 years before that. He has been a devout Christian for decades, and he uses the word 'healing' as it should be used: to denote the permanent removal from an individual of more or less debilitating symptoms. His theory of much incurable mental illness is simplicity itself: that it is often due to the influence of an ancestor or other relative, known or unknown, alive or dead (often suicides), aborted[2] or born. Of course, over-dominating parents are accepted as a common cause of emotional disturbance; what is new here is extension to ancestors never known or dead. McAll's cure in such cases, too, is simple: hold a Eucharist service for the ancestor. (The idea also relates to exorcism of ghosts[3], although this is nothing like so easy to check.) In some cases healing begins with the decision to hold the service; in others the service itself does the trick, or the healing may begin with it. McAll's mechanism is that the disturbed individual, directed in the proper course of things by God, is under the influence of the relative. The service breaks this bond and restores God's control.

This procedure is by no means as simple as it seems. Expertise is needed in distinguishing these cases from more straightforward illness, and in then identifying the controlling relative. As in conventional psychotherapy, a bond must be forged between healer and patient. McAll presents a host of examples. In particular, in several the patient was not immediately told of the service, or was elsewhere, yet reportedly felt better immediately.

What is to be made of this by someone meeting it for the first time? The first step is to test statistically whether there is a *correlation*, within that set of patients chosen in advance as being of this sort, between healing and the holding of the Eucharist. If so, one may then propose various *causative* mechanisms—McAll's Christian explanation being one. The consequences of each can be worked out and they may (in principle) be tested against each other in a well defined statistical procedure. However, if a strong correlation is confirmed, and in view of the recalcitrance of the cases McAll works with—anorexics, alcoholics, schizophrenics—it is not easy to credit any explanation other than his being as plausible. (Readers are invited to try.) In that case we have something very rare, at least for several centuries: a relatively easy test of a major religion.

Clearly McAll is satisfied of the truth of all this; but rigorous, external validation would be far more challenging. Discussion over the truth of religion has gone on more or less openly in the West since the Enlightenment, with no sign of any compelling argument either way. The religious make appeal to personal experience, the rational non-religious to the complete absence of tangible evidence, and the two talk endlessly past each other. The present notion puts the latter at a disadvantage in that disproof leaves them where they were before, whereas proof of correlation provides them with very serious food for thought. Nevertheless that is no reason why the test should not be done.

The assertions over 'remote' healing, where the patient does not know of the Eucharist service, are particularly interesting. I do not know whether McAll is aware of the incredible subtlety of means by which information may propagate, which the likes of James Randi have spent much of their lives revealing and devising protocols to prevent; but the readiness with which McAll embraces supernatural explanations for such utterly discredited phenomena as the Bermuda Triangle[4] suggests not. Much easier than trying to reconstruct past cases of healing in this respect would be to study present ones.

It is not the aim of this article to comment on the plausibility or otherwise of McAll's claims, based on the information available; or to discuss them in relation to Christian theology (though much could be said). The article has been written to draw attention to a technique of healing which, if confirmed, is of first rate importance, and which challenges skeptics to find an explanation.

Notes

1. Healing the Family Tree. K. McAll, Sheldon Press (London), 1st ed 1982, new ed 1986.
2. Ritual Mourning For Unresolved Grief After Abortion. K. McAll & W.P. Wilson, *Southern Medical Journal*, Vol 80, pp. 817–821 (1987). 3. Healing The Haunted. K. McAll, Darley Anderson (London), 1989. 4. The Bermuda Triangle Mystery—Solved. L. Kusche, Harper & Row (Neew York), 1975.

This article was written with the cooperation of Dr McAll.

Dr Anthony Garrett is a physicist at Glasgow University, and a former member of the Australian Skeptics and the Manchester Skeptics.

Homeopathy for your Hi-Fi?

David Fisher

Some people believe the strangest things about Hi-Fi...

One key to countering incredible claims is to understand why the average person is so susceptible to, and uncritical of, the many peculiar ideas which are 'common currency'. It is revealed here that one reason for the present sorry state of affairs is that those very technical journals which might reasonably be expected to set minimum standards of scientific evidence for the layman are, in fact, purveyors of equally fantastic claims. The underlying causes are the same in both cases—reluctance to apply even the simplest experimental controls, and a consequent reliance upon purely subjective evaluations.

News from the front

I have some good news and some bad news. The good news is that, contrary to popular skeptical rhetoric, the paranormal and pseudoscience are not a growing problem. The bad news is that they do not have to grow; they are already firmly entrenched everywhere and it is science and rationality which are embattled, isolated, and besieged. Only time will tell whether this military analogy will eventually turn into Custer's last stand, or the defence of Rorke's Drift. That is, will rationality be utterly annihilated or will it triumphantly turn the tables—against impossible odds?

Full recognition of this true state of affairs is depressing but necessary. Skeptics can unmask, debunk, challenge, or perform properly controlled experiments 'til the cows come home', but the ultimate key to victory is to understand why the 'man in the street' is so receptive to ridiculous claims in the first place. At the highest (theistic) level, this question has been tackled by Paul Kurtz [1], but his work does not entirely explain why otherwise hard-bitten down-to-earth punters are willing to believe almost anything. For instance how, in this day and age, can a book [2] which suggest that influenza is transmitted electromagnetically possibly be reviewed favourably [3] by the *Sunday Times*? Even allowing for the shortcomings of elementary scientific education and general knowledge [4], surely some more rational background than this instructs Joe Public. Aye, there's the rub, for the sad fact is that the innocent reader is bombarded with nonsense from *all* sides. He does not have to read *Psychic News*, *Prediction*, *Sunday Sport*, or the *Sunday Times* in order to have to believe six impossible things over his breakfast table.

Now, he may be as wise to *these* things as he is to those stories which appear even in 'serious' newspapers during the 'silly season' [5]. But then he turns to more serious fare, such as a specialist journal which deals exclusively with his hobby or profession, and this is where the *real* problem begins. His guard is down and he is eager to absorb material which is guaranteed to further his standing in his hobby or profession. Some of the concepts which may then be slipped to him are about as desirable as those items which certain advertisers in *Private Eye* offer to send to ones enemies.

State of an art

The main offending technical journal which is to be treated here is *HiFi Answers*. This is a popular magazine among recorded music lovers which, according to its sub-title, 'defines the state of the art'. I dare suggest that the state in question is a pretty poor one.

Some readers of the B&IS may be thinking that, to criticise a HiFi magazine, is to aim rather wide of the paranormal or pseudoscientific mark. It is not. The origins of the beliefs which are expressed in such magazines are entirely analogous to those found in typical paranormal or pseudoscientific sources. There is the same lack of proper (blind) testing, the same subjective evaluations, and the same emotional appeals to intuition and personal integrity. Little wonder that, having seen this scientifically sloppy approach used in a technical journal, a reader does not query its use in more questionable contexts.

HiFi (high quality sound reproduction) may be an unknown quantity to many B&IS readers, so it is worthwhile to supply a few baselines. It is known [6] that the smallest step-change in sound amplitude which can be detected by the human ear is about 0.3dB, the smallest detectable change in frequency is about 0.2%, and the least harmonic distortion which can be appreciated is about 1%. These are pretty crude capabilities when compared with those of measuring instruments or with the subtlety of the methods which adepts use to enhance their listening pleasure. Nevertheless, HiFi enthusiasts happily pay many thousands of pounds in order to obtain equipment (boasting such features as single-crystal wiring and gold-plated main plugs) which can be shown to be inferior in terms of 'beating' the above parameters) to off-the-shelf systems which cost a few hundred pounds.

The reason for the purchase of the more expensive equipment is a search for highly subtle subjective effects which, say 'experts' cannot be measured scientifically. Indeed, such methods conceal them. The analogy with 'psi' is obvious. However, I shall not dwell on the technological lengths to which enthusiasts will go in this search for their Holy Grail, because this has already been done by Douglas Self [6]. Suffice it say that he not only makes the link with the paranormal, but he also suggests that rational HiFi practice is being destroyed in much the same way that Lysenkoism destroyed rational genetic practices in Stalinist Russia.

One connection which Self missed is that which exists between nonsensical HiFi equipments and the many 'black boxes' which have been constructed by the paranormalists. For instance, there is the Hieronymous machine which was intended to detect 'eloptic' radiation. Its use involved judging the stickiness of a metal plate—an obviously subjective measure. Believers in 'radionics' have also constructed boxes with equally crazy purposes (and internal wiring), but the most notorious black box must be the E-meter of the scientologists. In fact, this device is much more technically sound than the others (in the sense that it might well be able to detect changes in electrical resistivity) but the manner in which every little random twitch of the meter needle [7] is accorded some significance is again deeply subjective. Nevertheless, it is a more complicated and less subjective device than are certain HiFi offerings!

Compare it, for example, with a 'passive preamplifier' which was reviewed recently [8]. The 'amplifier' was called the 'Cello Etude' and was designed as a rack-mounted box, thus sporting an attractive front panel with two pretty dials, and five nondescript faces. It cost £795. Not bad possibly for an instrument which is packed with the latest microchips and other electronic gadgetry, but this box was 90% empty. The remaining 10% were taken up by a mundane variable resistor, a multiposition switch, a dozen or so gold-plated connectors and some simple wiring. In comparison, Hubbard's E-meter is a miracle of modern electronics.

My Maplin catalogue suggests to me that the total retail cost of these components was of the order of £50 at most. One might think that the reviewer immediately carted the whole thing off to a Trading Standards Office (with criminal prosecution in mind) [9]. Not at all. The reviewer knew that a 'passive preamplifier' is better known as a variable resistor and does not amplify at all [10]. He had thus got exactly what he had bargained for.

He was also not surprised to see all of that empty space in the box for he knew that, like the empty space in a Japanese print, it played an important role in determining the overall aesthetic quality of the output. He *was* a little put out by the price—mainly because the quality of the 'output' was not commensurate with it. In order to prove this, he compared the Etude with the 'Hot Pot', a cheaper (£30) passive pre-amplifier which is no longer made (i.e., its magic box is no longer made). The report of the comparison was crouched in the sort of jargon which normally afflicts wine buffs and drama critics:

Like the empty space in a Japanese print

> Whereas the Hot Pot sounded open and natural, the Etude was rather 'shut in' and brash. Whereas the Hot Pot evinced a relaxed subtlety, the Etude seemed busy trying to prove itself. And, ultimately, whereas the Hot Pot remained sing-along fun, the Etude became studied and uninteresting.

Recall that he is comparing two *passive* devices by using no instrument other than his own ears. For any given setting of the dials, the Etude (or the Hot Pot) would be equivalent to (and could be replaced by) a fixed-value resistor such as a lump of carbon or a bit of electric fire element. How could they possibly imbue the music with any special quality?

Moreover, the importance of modern telecommunications means that extremely accurate signal analysis equipment is readily available. Why was it not used? I have no doubt that a 'blind' test would prove that the reviewer could not in fact tell one from the other. As it is, he is tipped off by the subtle cue which is provided by knowing which 'pre-amp' he has just

plugged into the circuit. Of course, *he* is about as likely to use blind tests as is 'Donovan the Diviner', who made such a splash recently on TV. HiFi experts who suffer from 'subjectivism' are as allergic to well-controlled tests as is Uri Geller.

The world according to Belt

If the skeptical reader's faith in technical journals has so far declined slightly, it is now due to take a nose-dive. For, if HiFi is suffering from Lysenkoism, then 'Lysenko' is Peter W. Belt. He appeared on the scene just a few years ago, but has already revolutionised the HiFi buff's approach to the fine-tuning of his equipment. Lysenko-Belt's particular obsession is not the Larmarckian inheritance of characteristics but 'electromagnetic charge fields and their interaction with even numbers, printed matter, and sound'. If he and Roger Coghill [2] were to get together, they would make a truly unholy alliance. For the moment, Belt contents himself with making medical *analogies*. Thus, he compares skeptics' disbelief in his theories with the pre-Pasteur ignorance of surgeons with regard to microbes, and he compares attempts to get good HiFi results (without his guidance) to the wisdom of performing 'open-heart surgery in a sewer'.

In fact, P.W. Belt does not seem to write anything himself. His 'representative on Earth' is Jimmy Hughes; a stalwart of *HiFi Answers*. It is easy to form the strong suspicion that P.W. Belt is perhaps a wonderful comic creation, like Dr Strabismus of Utrecht (whom God preserve). If so, he is the most successful and profitable April Fool joke ever perpetrated—but more of the financial side later.

The suggestions of P.W. Belt are already legion, and continue unabated. Fortunately for my research, many of them were recently summarised in a booklet which was presented 'free' with the May 1989 edition of *HiFi Answers*. So, here are 20 things that you never knew that you should do in order to improve your enjoyment of recorded music (in order of approximately increasing incredibility:

1. Tie looped reef knots in the mains leads and speaker cables of the HiFi [11] and, indeed, in every mains lead in the house (dishwasher, toaster, hair-dryer, etc).

2. An even number of knots should be used only when the cable carries a sustained positive voltage.

3. Use small loops of reef-knotted wire to join the live and neutral pins of every unused electrical device in the house [12a, 12b].

4. Scratch grooves (perpendicular to the direction of current flow) into the pins of main plugs [13].

5. Ensure that all equipment is secured with an odd number of screws, and/or has an odd number of supports [14].

6. Alternatively, put a plain piece of paper (*no print*) under the legs of ones HiFi (*or* one's sofa, *or* one's refrigerator) [15].

7. Slip paper sheets (*please no print*) into all LP sleeves and books. (N.B. gate-fold albums should be treated as single discs, but take *great* care if the publisher has unhelpfully included the *printed* lyrics of songs).

8. Alternatively, cut a corner from one page in every book, magazine, or CD booklet [16].

9. The snipping of a corner may be insufficient to deal with more substantial books and magazines such as 'War and Peace' and *Byte*, so one should instead insert silver foil [17].

10. Curtains should be treated like book pages. Since one's wife may object to corner cutting in this case, it is acceptable to pin up on corner. (This also effectively creates an odd number of corners, you see).

11. 'Try taking [out] only the back piece [of loudspeaker damping] and see how you get on ... Try a darkly recorded piece of music ... and see if the system can articulate clearly.' [18].

12. Remove the tracks from loudspeaker printed circuit boards.

13. It goes without saying that one should remove any warranty, quality control, warning, or other printed labels from loudspeakers.

14. Cut one corner from the loudspeaker grill.

15. The level of the point at which the mains supply enters the house may *seriously* affect ones listening enjoyment. A high entry point produces an adverse vertical polarity. The solution? Invert the sleeves of all LPs which are below the entry point [19].

16. There is also a horizontal component (of the electromagnetic charge field) which has to be considered. Therefore, groups of LPs should be 'aimed' at the mains entry point.

17. The notoriously bad acoustics of the Barbican Hall in London are due to its basement locations; plus the wilful ignorance of the performers and audience—who stubbornly refuse to orient correctly their sheet music, concert programmes and newspapers [20].

18. Remove the information printed on CDs [21].

Belt banishes 'up-right' dissenters from the Barbican Hall

19. Use silver foil to counteract the nefarious effects of the logos and instructions which manufacturers are so tiresome as to put all over their products. Also, putting a vertical foil strip in the top right-hand corner of a TV or VDU screen will improve picture quality and reduce eye-strain [22].

20. Finally, wearing a copper ring improves sound quality [23].

The last suggestion above has been taken up by a certain Laszlo Darvas of Budapest [24]. It is said to be really useful with regard to 'even-dominated objects'. He persuaded members of an entire orchestra to wear such armlets (amulets?). They were 'fascinated by the effect'. Note well that this was live music (no electronics involved), which is why this suggestion is in the 20th (most incredible) place. The only fascinating thing about the above is how an entire orchestra can delude itself, recalling tales of mass hysteria.

The paranormal connection again becomes clear when the 'voice of Belt', Jimmy Hughes, comments on point 15 above. Not only is music quality affected by the mains entry point, but also people. Hughes has a pertinent anecdote [25]: 'Interestingly, my next door neighbour's wife had expressed similar views [didn't feel quite right] about their room more than ten years ago, and apparently would never go their as she felt "uncomfortable" for some reason.'

Does this not sound like the lead-up to every ghost story which you have ever heard? Needless to say, Hughes had not understood the 'real' reason for the unease until the ubiquitous PWB visited him and pointed it out (i.e., the split-level room was below the mains inlet).

Exactly how widespread is the belief in Beltism? It has certainly been taken up by other HiFi pundits [21]. Paul Benson, who 'gives his unique opinions on the world of HiFi' to the readers of *HiFi Review*, is also an apostle of Beltism and tells us more about its financial aspects. He reports [26] taking along a 'Belt polarised resistor' (£3.50) when helping out at a shop demonstration. This device, when inserted into a spare mains socket, 'has an amazing effect, not only on the listening room but the whole house and indeed next door too.' Strangely, he still found it necessary to bring on the 'big gun'; the Belt Polarbeam polariser (£287.50). This guaranteed permanently to improve any number of CDs, LPs, and rooms.

The 'experimental' techniques which are used in these situations recall the early telepathy investigations. The experimenters 'haven't got a clue' and the 'subject' is given nothing but clues. On the other hand, feats of memory may be required of the subjects. The experimenter may well spend an entire evening making Belt-inspired modifications to the HiFi while simultaneously changing the record. The experimenter then returns to the original (control) record and asks if it sounds better. The victims probably agree that it does in order to get rid of their persecutor.

The editor of *HiFi Answers* (Keith Howard) is also quick to leap to the defence of Beltism. Hardly surprising, as it was he who managed to review the Cello Etude with a straight face. Howard and Belt obviously find common ground in their mystical approach to sound reproduction, and Howard gives short shrift to critics. Recently, a lengthy letter from an experienced professional broadcasting engineer [27] was published. He made some refreshingly down-to-earth comments about sound reproduction (you can't get better quality out than was put in), about Belt's financial interests (the thought of silver foil sales must make anything sound good to him), and about Belt himself (he can't afford to lose any more screws and, in view of his aversion to even numbers, how can he bear to listen with two ears?). Howard ran the letter under the title, 'Know All', and replied thusly

> I observe with dismay how this type of letter—and it is of a type—is so predictable in its structure and in its presumption ... There have been too many occasions over the past 30 years when those who have presumed to know best have manifestly proved not to ... Anyone who claims ... that we understand everything [about high-quality sound re-

*'Oi, you next door—stop improving my *!*!?* listening space!'*

production] ... is guilty at the very least of wishful thinking

This tone is very familiar. It is the tone used by the Targ and Puthoffs, the Halsteds, the Taylors, and the Puharichs of this world; when a Belt/Geller is criticised. It is, incidentally, also the tone used by those (like Harold Aspden and Alex Jones) who currently ride the anti-gravity band-wagon. (The latter subject will be covered in a future article.)

Turn of the screwball

So, this is the sad state of affairs. Skeptics will have to fight on more fronts than they imagined, and can expect no firm support from those keen hobbyists whose pursuits might seem likely to foster more than a modicum of objectivity. This is worrying. Each of the usual sources of paranormal misinformation are separately rather ineffective and their rules of evidence shoddy, but their *combined* effect has always been greater than the sum of its parts. Thus, alternative medical practitioners refer to the dowsing literature, the dowsers refer to the ley-line literature, and so on into the realm of pixies and fairies. It is clear that credence can now creep upwards in the opposite direction. The pseudosciences can draw strength from each other *and* from the incompetence of quasi-scientific amateurs. The dubious experimental techniques of paranormalists (when they bother with experiments at all) can well be superior to those of HiFi enthusiasts, but the latter are popularly perceived as being both firmly within the scientific domain and entirely non- controversial. Like a swamp, the sloppy methods and subjective judgements of those who are seen as being vaguely 'scientific' will inevitably drag public perceptions of the scientific process down to their level.

The HiFi field is particularly important because it involves *real* vibrations, waves, resonances, frequencies, etc. These terms were hijacked long ago by the paranormalists, and now constitute much of their terminology. When the news eventually filters through to them that the mystic viewpoint ('there are things we wot not of') now extends right into the very birthplace of their favoured terminology, the good word will echo back down the chain of credibility and the ratchet of irrationality will have been advanced by yet another notch.

What can be done? There are certainly enemies of the 'subjectivist' HiFi fraternity among professional audio engineers [28] but, as in so many other cases, any viable solution hinges upon the technical knowledge of the general public. This is not a promising avenue in view of the sort of nonsense which is currently spouted with impunity by sales assistants in HiFi shops [29]. Do not hold your breath while waiting for the passing of Beltism.

Notes

[1] P. Kurtz: 'The Transcendental Temptation', Prometheus, 1986.
[2] H. Oldfield, R. Coghill: 'The Dark Side of the Brain', Element Books, 1988. Roger Coghill has more recently suggested that electromagnetic fields cause both SIDS ('cot deaths') and AIDS. The former claim earned him a mention on *Hard News*, Channel 4's newspaper watchdog programme. Harry Oldfield, by the way, covers 'crystal therapy' for the *Journal of Alternative and Complementary Medicine*.
[3] N. Hodgkinson, The *Sunday Times*, 5 June, 1988.
[4] D.J. Fisher, *British and Irish Skeptic*, III(1), 1989, p. 15.
[5] Like the one about the snake: giant anaconda menaces village in Borneo (or Malaya, or ...) and is beaten off by brave worker (child, woman, ...) with bulldozer. The appearance of this story sometime in August is almost as traditional as that of Santa Claus at Christmas. Like the microwaved cat (which has now superseded older tales of dogs in ovens), it can now only be a so-called 'urban legend'.
[6] D.R.G. Self: *Electronics and Wireless World*, July 1988, p. 692.
[7] According to 'The Book of E-Meter Drills' by L. Ron Hubbard and M.S. Hubbard (Hubbard College of Scientology, East Grinstead, 1965), identifiable needle behaviours are: stopped, stuck, free, null, rising (slow, fast), falling (slow, fast), clean, dirty, changing, theta-bopping, rock-slamming, 'stage 4', ticking, and rocket reading.

[8] K. Howard, *HiFi Answers*, May 1989, p. 53.
[9] I recently spoke to a Trading Standards Officer concerning another matter (i.e., why are homeopaths allowed to charge inflated prices for distilled water?) He told me that since Mrs Thatcher abolished all retail price controls a few years ago, anybody can put any price on anything. So it's now a case of '*caveat emptor OK?*'.
[10] It is used to 'match', say, a compact disc player to a real amplifier so that power losses are minimised.
[11] Fuddy-duddy professional engineers do the same thing—in order to warn others that the cables are defective.
[12a] That includes the electric sandwich-maker which has lain unused in the attic these many years! To be fair, Belt points out the danger of forgetting to remove the shorting wires before using the appliance. He advises against using this method if there are children in the house; apparently oblivious to the dangers created by his undergrowth of loosely knotted cables.
[12b] In order to remain truly open-minded, one should really bend over backwards to find a possible scientific basis for these ideas. Could it be that the motor or heater coils in the shorted consumer item, plus the suppressor capacitor, constitute a 'magnetic field multiplier'? This counter-intuitive device (*Wireless World*, July 1979, p. 48) improves radio reception without being connected either to the radio or to an aerial. However, this distant possibility would only improve the reception of broadcast music; and Belt usually talks about recorded music.
[13] This includes scribing the *insulated* parts of some pins—another dangerous practice!
[14] Here Belt descends into pure numerology. Strangely, when he is on the subject of *3-point* supports he is in danger of making sense. That is, there can be no redundancy or instability in a 3-point support. Want to balance a 4-legged table? Turn it into a 3-legged one! Unfortunately, Belt prefers to add a fifth leg.
[15] A central tenet of 'Beltism' is that printed matter affects electromagnetic charge fields and thence acoustic performance. Belt says that visitors are amazed by the loss in sound quality when the bits of card are whipped out from under their chair legs. Hardly a blind test! One can easily imagine these same highly trained observers appreciatively sipping homeopathic preparations, soaking up coloured light, and fingering a healing crystal at the same time.
[16] Belt says that books and magazines invariably contain an even number of leaves. Here, he is onto something. it is obviously true of booklets and magazines, and of traditional books (which are sewn in 'signatures' of even numbers of leaves). Surprisingly, it also appears to be true of cheap edge-glued paperbacks. The extra sheet of paper effectively produces an odd number of leaves. Alternatively, the cutting off of a corner produces an odd number of page corners.
[17] Available from P.W. Belt, at a price (£11.50 per sheet). Aha! One begins to see the light. To be fair, there *is* a money-back guarantee for the unconvinced.
[18] No, I do not understand it either. That is why the suggestion is given *verbatim*.
[19] This sounds very much like jokes about electricity dripping out of mains sockets; but this is no joke.
[20] Upside-down of course, although Mr Belt's expensive silver foil can avoid that.
[21] Or using the silver foil. Here, the delusion is revealed to be a shared one. Chris Breunig of *HiFi News* removed his CD lettering with a solvent and reported the improvement quality to be 'fantastic'. Almost as dramatic as faith-healing, I expect. There was no mention of a control sample.
[22] Another shared delusion. A certain Jacques Surbeck of Geneva markets sets of 'studs' to counter the ill-effects of an undetectable VDU radiation. One stud is placed in each corner of the screen, and two are placed on the keyboard. The radiation, of course, is undetectable to anyone but Surbeck and a few friends. Their methods of detection involve Kirlian photography and Benveniste-style 'cultures'. When Surbeck presented his theories (26 January 1988) to the staff and students of the Swiss Federal Institute of Technology in Lausanne (the present writer's Alma Mater), the local newspaper reported that there was a near-riot as skeptical listeners rushed to issue Randi-type challenges to Monsieur Surbeck. He apparently declined them.
[23] No doubt it cures rheumatism at the same time.
[24] L. Darvas: *HiFi Answers*, May 1989, p. 7.
[25] J. Hughes: *HiFi Answers*, May 1989, p. 15.
[26] P. Benson: *HiFi Review*, June 1989, p. 21.
[27] R.J.F. Stewart: *HiFi Answers*, July 1989, p5.
[28] The following conversation has been reported (*Electronics & Wireless World*, 1988, p. 1067). HiFi Reviewer (of the subjectivist type): 'Can I review your new audio amplifier?' Manufacturing Executive (sarcastically): 'Yes, if you compare it with a piece of straight wire'. Reviewer (apprehensively): 'What sort of wire?'
[29] Beltism aside, they may well try to tell you that the bass unit (in some designs) is set forward of the tweeter because 'high-frequency sound travels faster than low-frequency sound'.

Dr David Fisher is a scientific editor and writer, convenor of the nascent Wales & West Skeptics and secretary of UK Skeptics.

HELP!

We aim to spread the skeptical viewpoint as far as we can, and we are always looking for ways to increase the circulation of the *British & Irish Skeptic*. Please let us know if you can help in any way.

In the eye of the beholder

Hocus Pocus

Keeping an eye on iridology

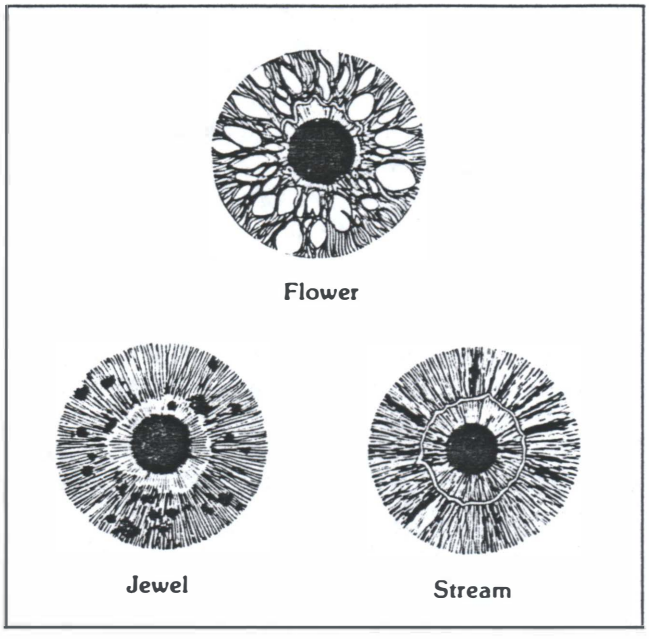
A skeptic has a duty to society and to himself to be a doubter, not an unbeliever; willing to investigate the most bizarre of claims or supposed happenings and to apply care, discretion and judgement to whatever evidence may be presented. At the end of the day he should be satisfied that his conclusion has been fairly arrived at after scrupulous investigation.

For instance—Acupuncture. This extraordinary discipline has been practised and investigated over a long enough period that it should no longer be uncertain whether it is a proven scientific medical method which works or just another old wives tale or superstition—an example of how the unscrupulous take advantage of the ignorant and unwary. But are we in fact so sure? It seems utterly absurd to believe that numbers of needles stuck into various parts of the body can influence the course of an illness or induce insensibility or anaesthesia. But it is a medical tool which has been in constant use in China for over two thousand of years and is in common use today. There are one billion Chinese. Can they all be wrong?

What would be your immediate and automatic reaction if told that the irises of both human and animal eyes, are directly linked with the body's internal economy and that one's well being or otherwise is indicated by marks and lines showing in your irises? And that such guide lines conform with an ordered system that can be mapped and interpreted as an early warning to determine that you are in fact suffering from a condition—or its early onset—of which you were unaware?

It is a fact that the condition of the blood vessels in the interior of the eyeball indicate symptoms of certain diseases—diabetes and cancer being the most obvious—but there are no claims that particular locations within the eyeball are related to specific parts of the body. It is reasonable to accept that if one suffers from a disorder of the blood or lymphatic system, or a condition where foreign substances or microscopic growths are suspended in the blood and circulate throughout the body, expert examination of the eye where blood vessels can be inspected, will betray by their appearance that there is a problem. An ophthalmic specialist who inspects eyes every day will notice unusual symptoms and recognise the signature of various diseases.

Such investigations however are surely very different from the suggestions of the iridologists that every degree around the circle of the iris corresponds exactly with specific organs and parts of the body, so that should a person (or animal) break a leg a mark will show in a particular sector of the iris, enabling a practitioner to diagnose problems and suggest treatments or remedies.



The eyes may mirror the soul but how many readers believe that the soles may mirror the body? This is what another way-out quasi-medical 'science' and treatment known as reflexology would have us believe. Is there really any proven basis for belief that certain areas of the soles of the feet relate to other parts of the body? To this writer such suggestions are on a par with the claims of psychic practitioners and mystics who claim to be able to detect the whereabouts of a missing person or body by looking at a map—or the Uri Geller type claims to locate existence of precious substances and valuable deposits in the earth either by examining maps or flying over the territory. These practices are really not far removed from 'fortune telling' by inspection of the soles of the feet or palmistry. I'd just as soon rely on the Tarot—much more fun too.

Once the door to such beliefs is opened even a crack, numbers of similar weird possibilities are disclosed, each mutually supportive and claiming positive results. Nevertheless it behoves us not to prejudge but to examine the evidence. If our readers find this subject sufficiently intriguing, we hope they will submit their views, supported by evidence wherever possible. Who knows, we may even contribute to the ever-growing store of human knowledge.

Hocus Pocus is the *British & Irish Skeptic's* roving correspondent.

Remembering Richard Feynman

Al Seckel

This article is reprinted with kind permission from LASER, the magazine of the Southern California Skeptics.

The entire intellectual world suffered a tremendous loss with the death last year on February 16,1988 of physicist Richard Feynman. He was a tremendous influence on me and on countless others who were lucky enough to share with him his wisdom and unique outlook on the world. I thought that if he were present today that he would try to do away with the nonsense of being mourned, but we must mourn him.

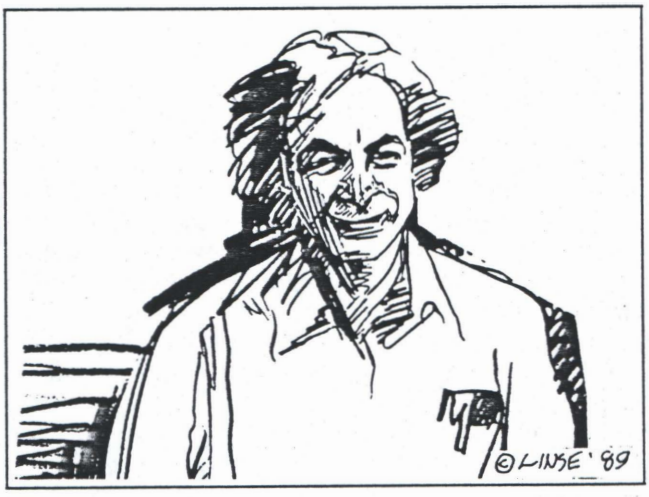
Few men of our time have managed to lead a life so deeply filled. And few, it seems now, are less susceptible to neat memorialization. How is one to summarize a mind whose most persistent habit was distaste for summary, a resistance to all final conclusions?

Feynman's contributions to 20th Century physics are legendary. Although there are many people who have never heard of him and probably could not care less about the finer results of science, there are also others who share a deep passion for understanding the workings of the universe. Feynman contributed greatly to that understanding and for that we should be eternally grateful.

What I cherish most about Feynman was his deep love for his subject matter and his remarkable ability ti transmit that love to his students. He could take the most seemingly mundane in science, look at it or describe it from a new point of view (a view that was never obvious) and make it come alive and interesting.

Feynman once related a story about one of his friends who charged that Feynman missed the beauty of a flower by studying it. Feynman responded: 'First of all, the beauty that he sees is available to other people—and to me, too, I believe. Although I might not be quite as refined aesthetically as he is, I can appreciate the beauty of a flower. But at the same time, I can see much more in the flower than he sees. I can imagine the cells inside, which also have a beauty. There's beauty not just at the dimension of one centimeter; there's also beauty at a smaller dimension. There are the complicated actions of the cells, and other processes. The fact that the colours in the flower have evolved in order to attract insects to pollinate is interesting; that means that insects can see the colours. That adds a question: does this aesthetic sense we have also exist in lower forms of life? There are all kinds of interesting questions that come from a knowledge of science, which only adds to the excitement and mystery and awe of a flower. It only adds. I don't understand how it subtracts.'

There is another thing, perhaps petty, that I also



miss. Every once in a while, in the early stages of the Southern California Skeptics (SCS), I would receive a phone call from Feynman; he had just read another account of us in the news or had accidentally heard an interview with us on a talk radio program. 'Boy, you guys are great! You are doing such a wonderful job!' Those kind words from him helped me continue through some rather difficult times with the formation of this organisation.

It was also fun introducing him to James Randi. What a pair! With Feynman staying up into the wee hours of the morning trying to figure out some of Randi's mental tricks. I remember Randi telling Feynman, 'You can't get this trick. I haven't given you enough information!' Feynman responded, 'That's what all physicists try to do—try to come to conclusions with the barest of information.' (Feynman figured out the trick!)

Alas, Richard Feynman died, so to speak, unfinished—still changing, still wondering, still unsolemn and incautious, still skeptical, still not asking the last question, but the one after that.

In order to help people remember the great inquiring, skeptical spirit of Richard Feynman, it is our pleasure to bring to you two *previously unpublished* Feynman stories: the first relates to a perpetual motion machine that he investigated in the 1960's that blew up and involved him in a lawsuit. The second story is an encounter along with Al Hibbs (former Chairman of SCS) with the famous 'psychic' Uri Geller. SCS would like to thank Feynman's close friend and editor Ralph Leighton (a long-time SCS member) for providing us with these stories for publication.

Al Seckel is Executive Director of the Southern Californian Skeptics, and a physicist and historian of science

Surely you're joking, Papf and Geller!

Richard Feynman

Mr Papf's Perpetual Motion

One time [in 1966] some students came over to my house with one of those magazines about automobiles—*Roadrunner*, or something like that. In it there was an article about a marvellous new engine which works on a new principle for getting power, and it's really quite remarkable. You don't have to buy fuel for the car; the fuel is injected into the cylinders when the engine is manufactured and lasts about six months. Then you have to bring it back to have it recharged. The engine is air-cooled and can make a car run 60 miles per hour on the freeway.

There was a picture of the engine and its inventor, Mr Joseph Papf, who had come to the United States from Hungary. He's standing next to the engine, making measurements on it with a panel full of dials. Various people had looked at the engine and made various remarks about it in the article. Mr Papf was going to demonstrate his engine in Los Angeles, and the students wanted me to go along with them to see it. I told them nothing has enough power to go for six months like that, unless it's a nuclear reactor, which it surely is not. 'Fakes are always coming out,' I said, 'and the guy's probably trying to get investors to invest in his engine.'

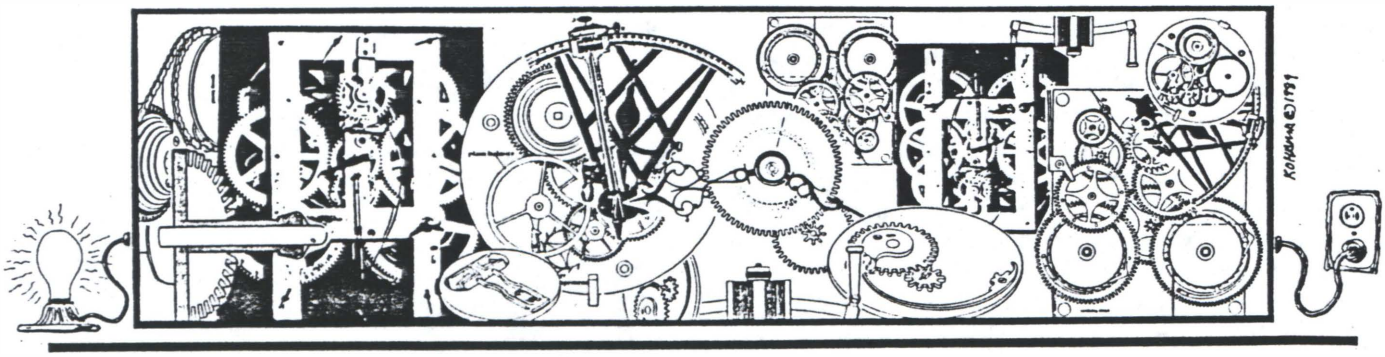
Then I told them some stories about perpetual motion machines, such as the one in a London museum which was in a glass case. It had no wires connected to it, yet it turned around and around. 'You have to ask yourself, 'Where is the power supply?' I said. In that case, it was some air coming up through a little tube installed in one of the wooden legs holding up the glass case.

The students talked me into going along with them to see the demonstration. It was held in a refrigerator company's parking lot, an L-shaped area. The engine was down at one end of the lot, while the people, about 30 or so, were at the bend of the L, some distance away. Mr Papf talked about how the motor worked, using vague and complicated phrases about radiation, atoms, different levels of energy, quanta, and this and that, all of which made no sense whatsoever, and would never work.

But the rest of what he said was important, for every fraud has to have the right characteristics: Mr Papf explained that he had tried to sell his engine to the big automobile companies, but they wouldn't buy it because they were afraid it would put all the big oil companies out of business. So there was obviously a conspiracy working against Mr Papf's marvelous new engine. Then there was a reference to the magazine articles, and an announcement that in a few days the engine was going to be sent to the Stanford Research Laboratory for validation. This proved, of course, that the engine was real. There was also an invitation to prospective investors to get in on this great opportunity to make large amounts of money, because it was very powerful. And there was a certain danger!

There were quite a few wires running from the engine down to where Mr Papf and the spectators were standing, into a set of instruments used for measurement; these included a variac, a variable transformer with a dial which could put out different voltages. The instruments were, in turn, connected by a cord to an electrical outlet in the side of the building. So it was pretty obvious where the power supply was. The engine started to go around, and there was a bit of disappointment: the propeller of the fan went around quietly without the noise of an ordinary engine with powerful explosions in the cylinders, and everything—it looked very much like an electric motor. Mr Papf pulled the plug from the wall, and the fan propeller continued to turn. 'You see, this cord has nothing to do with the engine; it's only supplying power to the instruments,' he said. Well, that was easy. He's got a storage battery inside the engine. 'Do you mind if I hold the plug?' I asked? 'Not at all,' replied Mr Papf, and he handed it to me.

It wasn't very long before he asked me to give me back the plug. 'I'd like to hold it a little longer,' I said, figuring that if I stalled around enough, the damn thing would stop. Pretty soon Mr Papf was frantic, so I gave him back the plug and he plugged it back into the wall. A few moments later there was a big explosion: A cone of silvery uniform stuff shot out and turned to smoke. The ruined engine fell over on its side. The man standing next to me said, 'I've been hit!' I looked at him, the whole side of his arm was torn open, you could see all the muscle fibres, tendons—everything. I helped him over to a chair to sit down. The youngest student in the group knew what to do. 'Make a tourniquet out of a tie for that man!' he told me. He gave orders to everybody, and began to give artificial respiration to another man who was lying on the ground. It was really quite wonderful to see this young student take over with all those grown men around. By the time the paramedics came, we realized that there were three men injured, the one lying on the ground most seriously: he had



a hole in his chest (so the artificial respiration wasn't effective) and he ultimately died. The other two men survived. We were all shaking.

I turned to the young man who had been so capable in coping with the unexpected tragedy. 'I don't usually drink.' I said, 'but let's go over to a bar and have a drink to calm our nerves.' We went into a bar and ordered a drink, I was surprised to discover that the young man who had been the most mature of all of us was underage—he couldn't get a drink. We started to talk about the engine. One man, an investor who had brought an engineer with him to see the demonstration, said, 'My engineer advised me to stand mainly behind the corner of the building and just peer out during the demonstration, because these new engines are sometimes dangerous. Somebody else pointed out that Mr Papf had previously done some work with rockets, and the explosion looked like fuel when it goes off. My idea was that had Mr Papf sent his engine to the Stanford Research Institute as announced, the game would be up in a few days. Therefore an explosion just big enough to destroy the engine would keep the game going a little longer; it would show the tremendous power of the engine, and, most importantly, it would provide a reason for investors to put more money into the project, now the engine had to be rebuilt. We all agreed that the explosion was much larger than Mr Papf probably intended.

After such an explosion with the resulting fatality and injuries, there was, of course, a lawsuit. Mr Papf sued *me* for ruining his engine, charging that my stalling around with the cord caused him to lose control of it. Caltech has a legal department to protect its errant professors, so they talked to me. I told them I thought he didn't have much of a case: he would have to prove how the engine worked, and he'd have to demonstrate that in fact, taking the cord off caused the explosion.

The case was settled out of court, and Mr Papf was paid something. I guess there's a certain amount of wisdom in not going to court, even when you're right, but I cost Caltech a certain amount of money by going to that demonstration. I still think I correctly diagnosed what was happening with a reasonable probability. And, of course, nothing has been heard of Mr Papf's new engine since.

A Visit With Uri Geller

While I was out at Malibu [in 1975] using John Lilly's Epsom salt flotation tanks, all sorts of people came through who were connected with the 'mystical' world. One man began talking about Uri Geller, who was supposed to be able to bend keys through some kind of supernatural forces, and could bend a wire inside a tube, et cetera. This man told me that Geller had convinced some people in England—for example, a Professor David Bohm in physics—of his supernatural powers. [Professor David Bohm had written some books trying to find a connection between Eastern mysticism and modern physics; his most famous is 'Wholeness and the Implicate Order' (1980).—Eds] He thought I should like to investigate this, and would I be interested?

I, of course said yes, indeed, I would be interested. I told him, I think the laws of physics are supposed to describe all phenomena, and I don't see how Geller can do those things, according to the laws I know. So if it's demonstrable, then it means I don't know all there is to know in the directions that I *think* I know, and therefore it would be interesting to me.' Of course I've lived a long time, and what I said was a little bit what you would call dissembling. I dissembled slightly. You see, I had been through a lot of experiences, and I knew that time and time again these things don't work. I had read a lot of stuff about extrasensory perception, and studied what was known, because it was very interesting to me, but it always ended up in tawdry nothing. So I had every expectation that this was just some kind of a trick. But I'm still very interested; I mean, I'd like to see how he does it, for the fun of it. So I said, 'Yes, I'd like very much to meet Uri Geller.'

The guy went on about how 'skeptical' professors had studied the keys bent by Geller under an electron microscope to understand the forces that might have bent the key, and how it might have melted or not melted—all this nonsense. I knew that a magician is very clever, and that it's easy to fool me, so I told the man, 'Listen, I want very much to meet Uri Geller, but I'll tell you something that's different about me: I'm smart enough to know that I'm dumb.'

I had read a lot of stories about extrasensory perception, and I knew that the weakest position to be in

is to think that you are cleverer than the other guy, and that *he* can't fool you. Because a good magician can do something shouldn't make you right away jump to the conclusion that it's a real phenomenon; you need a helluva lot more rigidity. And you'll find out that 99.9–100 percent of the time it's *not* something strange, it's not something mysterious, but something ordinary, a trick! But it's fun to *find* the trick, and the only way to find the trick is to be damn sure it's a *trick*, and not to be ready to think that it might not be, because otherwise you slip too easy. A good example of this business about not being smart enough to know how dumb you are is a story about two boys in France, which came out during one of the extra-sensory perception phases. They were two simple farm boys, who did something or other, and told the Signor, who told the priest, who told the mayor, and finally the professors from Paris came—the great psychology professors became convinced that the boys really *had* some special powers.

What happened was that in the beginning the boys simply faced each other, and just by moving a little bit, or jiggling, or doing something, they were able to signal each other. Somebody caught on to that, and turned them around so they couldn't see each other; then a screen was placed between them; all kinds of stuff, and they were still doing it! It turns out that the last trick was being done with the assistance of an uncle who was up in an attic and could see both boys, transmitting the signal from one to the other. The boys were getting so much attention, and hearing that the professors were going to come see them the next week, they had time to think about how to improve their trick.

Since the boys kept changing the way they signalled each other, and since the professors assumed that the boys were transmitting their thoughts to each other always in the same way, they couldn't figure it out. And the most significant thing is that the professors kept saying, 'These are *simple* folk: they're just boys from the farm. We can't imagine that they could be clever enough to fool us; we're not so foolish as to be easily fooled...'—but that's exactly what was happening. The small boys from the farm were fooling the professors from the University of Paris. So I *knew* that I could be fooled in this way, and figured that guys like Bohm must not have felt that they could be as easily fooled as I can be.

A few weeks later my phone rings, and it's Uri Geller: he's in Hollywood, and I can come and see him at his hotel. I asked if my friend Al Hibbs, who was interested in making television programs (and who is a lot quicker at spotting a trick than I am), and my son, Carl, could come. Geller said yes. He particularly liked that my son was coming, because he is especially good in front of children. Carl said, 'Great! Great! I'll invent some tests for him to do.' So Carl put together a package. He got some very soft, easy-to-bend pieces of lead from an adding machine that he was taking apart—much easier to bend than a key. He put a piece of paper with a carbon paper in an envelope—all Geller has to do is make a mark on the paper. He got a tube made of glass, with stoppers at each end, and put a thin piece of wire inside that Geller was supposed to bend. So Carl invented all these tests which would be easier than bending a key, if the bending were done by mental effects, as Geller claimed.

We went to Geller's hotel room and found a very nervous man, walking back and forth, answering the phone, which rang often. Carl gave him his box of simple tests, and Geller put it aside—he didn't even look at it. Between telephone calls he explained to us that sometimes his power comes, sometimes it doesn't, and he doesn't know where it comes from. He told us various theories that people have suggested: so and so says it might be such-and-such; so-and-so says it might be extra-terrestrial. Of course, I'm just sitting there and this fog is passing by.

Then Geller handed each of us a little pad of paper and a pencil, and asked us to make a drawing: he's supposed to guess what it is. It was easy to see how he was going to do that, because the back of the pencil moves when you make a drawing, and he guessed in the way a fortune teller does, by suggesting that it might by 'this-ish' or 'that-ish', and looking at our faces for a sign of excitement, showing that he's on the right track. Of course, he had his hands over his head, but what do we know about that? He said things like 'There are circles involved... (he saw the pencils move)' But it didn't work with us because we were absolute poker faces.

So Geller's mind-reading didn't work. He then picked up a key, but said the power wasn't coming. We were watching him like hawks. We shouldn't have done that: We should have let him get away with his mind-reading trick, become relaxed, and let him do his stuff. He answered the phone a few more times, saying that in between that he didn't have the power right now. Then he says, 'Hey! It often works better under water. Let's try it under water.' I don't know what he means, but he goes into the bathroom with a key, and he turns on the faucet. We quickly follow him in there. Al's on Geller' s left, Carl's on his his right, and I'm behind—all four of us are crowded into this tiny bathroom—and three of us looking down to see if he's got a tool to come out of his sleeve, or what! Nothing happened, I was a bit disappointed: he wasn't able to do one trick; he was not a superstar magician, as I had hoped.

Al called me up later with a hypothesis about the key bending under water. We were all looking for a tool, and saw none, but if Geller could distract us for a moment, he could slip the key into the pipe and quickly bend it, and with all the water rushing down, it would be hard to see. I don't know if that's the way he was going to do it, because we never gave him a chance.

Having faith in skepticism

Nick Beard

Science, belief and meaning

Paul Kurtz recently gave a talk in London, entitled *The Transcendental Temptation.* Kurtz was interesting, but the behaviour of the audience left much to be desired. There seemed to be a self-righteous smugness in the air. A section of the audience made a notably ill-mannered response to a man attempting to explain his sense of *bliss.* This sensation, which he sometimes felt during periods of intense and productive scientific work, had a flavour which disturbed the flat certainty in a simple material world. No such doubt appeared to trouble the lives of many of the audience, who laughed openly and loudly.

Many of Kurtz's audience would perhaps argue that they run their lives according to the precepts of science—an aseptic technique guaranteed not to allow irrationality to contaminate thought. In what way does this differ from *logical positivism*? This philosophy, associated with, among others, the late A.J. Ayer, argued that only things which were empirically testable had any meaning (I say *testable* deliberately to fudge the issue of verifiability versus falsifiability) It fell down by not applying its own metaphysical premise to itself. If metaphysics was untestable—and thus *meaning*less—so was the basis of logical positivism. A thorough skeptic also runs this risk.

Limits of logic

On the wall of the library where Kurtz spoke is a portrait of Bertrand Russell. Russell tried to set mathematics—and thus the basis of science—on a completely rigorous footing. With Alfred North Whitehead he wrote *Principia Mathematica*, which was to expound once and for all the essence of logic. They failed. It was proved mathematically soon after, by Kurt Gödel, that their central problem was not solvable. Perhaps they didn't know it at the time, but their explanation was founded on a great fallacy. It is also one which many who condemn other people's belief systems suffer from: it is the fallacy of the *metaposition.* A metaposition is a higher viewpoint, a position from which all can be seen, including other people's reliance on implicitly contradictory language. My contention is that such a stance cannot be attained. Wittgenstein suggested that language is a ladder that we should dispose of once we have climbed above its constraints. But this ladder cannot be climbed—it doesn't go anywhere. There is no directed ladder but a large spider's web which goes off in all directions, and never ends.

Deep down doubts

Can we ever know anything with certainty? A simple starting point is that perception is a *constructive* process. Sensing is never mere passive reception of data. Data is sorted and processed according to preconceived categories. Whether these categories are a matter of nature or nurture is irrelevant here. The answer is probably *both.* Outright assertion of the primacy of the subjective may not be the best response, but surely neither is the alternative—which is what sociologist Habermas has called *scientism*: the belief that the only legitimate source of knowledge is science.

Limits of language

Language divides the random chaos of experience—after it has been filtered by very low-level 'prejudices', the 'stereotypes' mentioned above—into categories which are to a significant extent defined by the language in which they are expressed. This can be demonstrated by the different ways languages divide the light frequency spectrum into different (and arbitrary) sections to label as colours. There are probably basic clusters of sense data which receive corresponding labels in all languages; like dogs, bodily organs and musical instruments; but many of the truly important elements of social existence can lay no such claim to inter-cultural coherence.

Two experiments provide nice illustrations. An experiment involved showing slides of playing cards to people, very rapidly. There would be errors introduced, such as the 'six of spades' being red. This would be perceived as either a six of spades, or hearts, without any inkling that anything was wrong. Gradually the subject would be exposed to the cards for longer and longer periods, and eventually would see the errors. In between, a period of *anxiety* was noted. Subjects began to suspect something, but could not see what. A similar experiment has been conducted using film of people speaking—but with a mismatched soundtrack. The picture would show the speaker saying 'jump,' and the sound would be 'bump.' Subjects heard nothing unusual, either *jump*, *bump*, or perhaps *dump.*

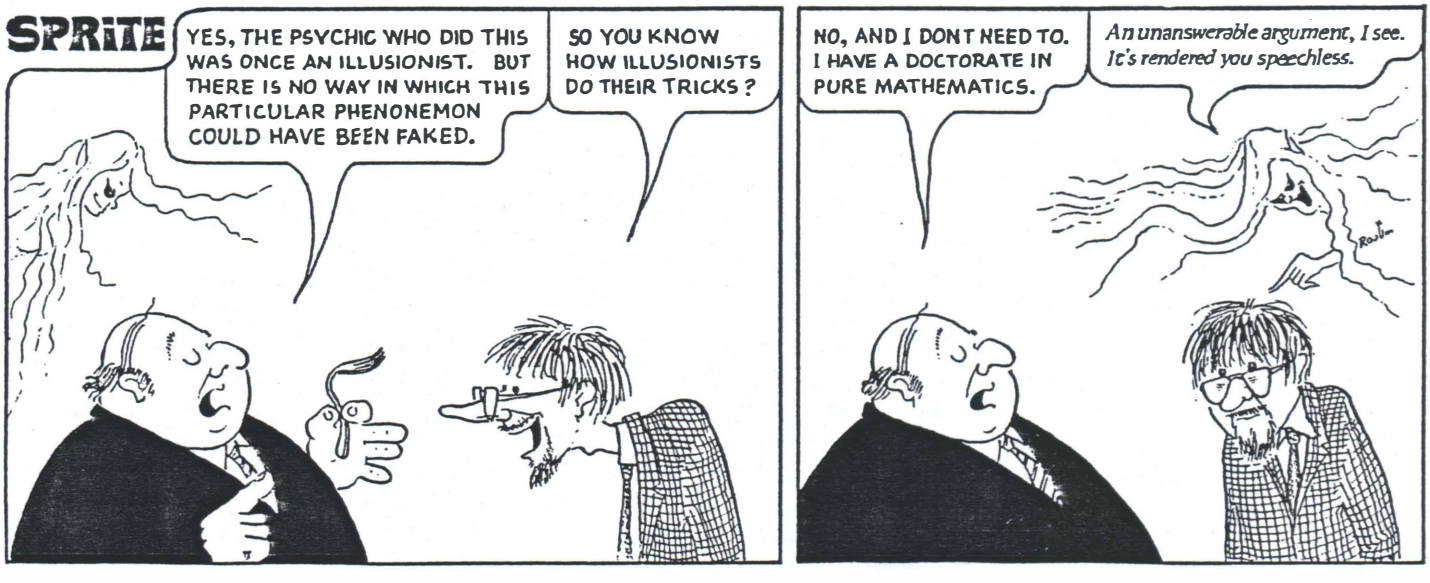
The pit of solipsism

We must surely, then, doubt even the evidence of our senses. How can such scepticism, such doubt, be ruthlessly applied without falling into the pit of solipsism? Solipsism is the belief that there is *nothing* the existence of which we can be certain. Everything could be an imaginary construct. Descartes' way out—which included the famous *I think, therefore I am*—is doubtless unacceptable to many (Perhaps it should have been rewritten as 'there is thinking... probably'?). It was based upon the belief that God would not fool us. So if God does not exist, how can we be sure we are not being tricked? It is easy to believe that we are able to manage without any need for faith—that we can manage our whole lives according to the certainties which follow verification by science.

Some of this certainty can be wisely diluted by a solution of Popper from which a notion of science can be distilled. Science uses the best available theories to explain the known observations. We can perhaps mark the limits of science, but are these the same as the limits of knowledge? Science helps to explain plate tectonics and the genetics of schizophrenia, but what about aesthetics, or shopping? Claiming to live this rigorous way is reasonably convincing, but does it account for the discomfort associated with the playing cards above or the wrecking of Einstein's blackboard? Einstein's only lecture at Cambridge left two blackboards covered in his notes, calculations and explanations. They were kept in the seminar room as a souvenir. A Professor came into the room one morning to find the cleaner kindly finishing wiping one of the boards clean, about to start on the other. An academic horror story? And a true one. A disaster? But no information was lost. Nothing of scientific value—only of sentimental worth. Would a true sceptic feel any discomfort at this? Why?

'Explanations should be as simple as possible but not simpler,' said Einstein. Perhaps this is a route to a reasonable basis for limiting scepticism? If we are a part of a swirling mass of meaningless, arbitrarily divided existence, then we need some rules to judge one thing against another. Simple empiricism is not good enough, unless you are prepared to suspend your scepticism at an arbitrarily chosen point. Perhaps then parsimony is an alternative—arbitrarily attempt to keep the number of arbitrary rules and judgements to a minimum. It should be remembered that truth and certainty only have meaning in so far as they have behavioural consequences. And perhaps the most immediate behavioural consequence for many people should be the recognition that smugness is usually unfounded.

Dr Nick Beard trained in medicine and psychiatry, and is currently studying knowledge-based systems.



Skeptic at large...

Wendy M. Grossman

Summer heat affects extra-terrestrial brains differently from human ones. Just as heat causes proteins like egg-white to solidify in patterns, so the heat affects the non-human brain. Recent tabloid examples of this include a sudden resurgence of interest in crop circles and the *Sun's* sudden interest in numerical patterns. Did you experience great psychic and spiritual revelations or changes on 6 July, shortly after 12.34p.m.? No? The *Sun* revealed that at 12.34 and 5 seconds on that day a psychic second of great significance was going to take place, and that a similar numerical line-up would not be seen again for a century. What line up? How sad to have a limited terrestrial mind. 12:34.5 6-7-89 of course. Of course, this psychic second was of great significance only to *Sun* readers who spread out their copies of the paper and stared into Doris Collins' eyes. The tabloid kept a hotline open until 8 p.m. so that readers could call in and tell them what happened.

The next day's papers features a spina bifida victim whose painful agony ended, several people whose dead relative smiled at them, alleviating their grief, and a woman who was cured of a limp she had had for five years. Doris Collins was not shown embracing any of these people. Long term *British & Irish Skeptic* readers will remember earlier similar experiments by the *Sun*. Two years ago, they sent Uri Geller up in a helicopter, and last year they had people gaze into the eyes of a photograph of Doris Collins. In 1986 they had a competition to find the six best amateur clairvoyants in Great Britain. Sadly, the *Sun* prefers not to enhance its reputation as a scientific journal conducting impartial experiments by submitting all its data for examination. One may read between the lines of the most recent article and guess that reader response was a bit thin, but the details of the experiment are not published. But distant planets are foreign countries: they do things differently there. An obsession with picayune details—like hard evidence—is a serious limitation of the terrestrial mind.

Meantime, crop circles. *Today* has neatly summarised the primary theories: demented hedgehogs, UFOs, stationary whirlwinds, helicopters flying upside down, giant hailstones (they suggest these are in fact frozen sewage dumped by aeroplanes), small holes in the ozone layer (which let through damaging ultra-violet rays which cause crop stems to collapse), animals running in circles when caught in snares, and mating deer. *Today* reports that hedgehog lovers have protested that it's more likely that the circles are caused by giant mushrooms. An article in the *Telegraph* weekend magazine concentrates on the theory that whatever force it is which creates the crop circles is intelligent.

These articles apparently were inspired by two new books, both about crop circles. One, *Circular evidence*, by Andrews and Delgado, concentrates on the theory of an unknown intelligence. The other, *The circle effect and its mysteries* by Dr Meaden, a physicist, concentrates on the theory about wind vortices. Both books are published the second week in July. Watch the *British & Irish Skeptic* for reviews... *Today* seems to like the sound of mad hedgehogs best. The *Sunday Times* explains that Delgado and Andrews are consultants to *Flying Saucer Review*. BUFORA researcher Jenny Randles objects to the alien intelligence theory, and, it turns out, has also published a recent book about the circles, *Controversy of the circles*. Randles and her co-author Paul Ford complain that Andrews and Delgado are encouraging hoaxes. However, Andrews and Delgado say they won't be fooled: they can identify genuine circles by using dowsing rods.

'Defence probe jelly wobbles in great field circles riddle' *Today* announced on Monday 10 July (this is my entry for the 1989 *Headline of the Year* contest). The story behind it: Andrews and Delgado found a lump of white jelly in one of the crop circles. Samples are being stored frozen and are due for testing at the University of Surrey and in Guildford. Reports are that nine people 'suffered severe chest colds within hours of coming into close contact with the white blob.' *Today* reports that dossiers have been shown to Margaret Thatcher, the matter has been referred to the Ministry of Defence, and Tory M.P. Teddy Taylor has tabled two parliamentary questions on the circles.

Meanwhile, back at the *Sun*, the aliens work on undetected by those who would most like to find them, apparently unable to distinguish between the work of nature and man's imposition of patterns. A little remedial work would tell that calendars are man-made, that numerical counting of the passage of time is a matter of human perspective, and that there have been many calendars created by many different societies. On the other hand, perhaps they know all that, and just think Britain's calendar has some special resonance with the Universe. Remember, in north-eastern America at that moment it was 07:34.5 7-6-89.

Wendy Grossman is the founder of the *British & Irish Skeptic*, and a writer and folksinger.

Heaven and Earth

Michael Hutchinson

Hocus Pocus ended his review of the BBC programme *The Psychic Tea Room* (B&IS May/June 1989) asking for readers' views on whether the demonstration of true belief in fortune telling and magic of various kinds is undesirable, and therefore shouldn't be publicised and pushed. My view of the programme and its message is entirely different from that of my friend Hocus. Yes, the programme was full of anecdotal evidence from a number of psychics, a channeller, and several fortune tellers. But none were made out to be wonderful. The scenes with the channeller of Mafu were disturbing. In a long speech while under a so-called trance, she told a member of the audience that his future wasn't with the woman accompanying him whose face was on screen throughout. She (the channeller) played with the emotions of the woman whose eyes welled up with tears. Her whole future was being destroyed in front of her. The message of Mafu was certainly clear. I thought the message of the producer was equally clear, that this channeller was nasty, cold hearted and destructive.

Donovan Wilkins makes his living by drilling for water and, of course, he decides just where to drill by waving his forked twig. In the first programme he was shown at work in his native Cornwall, 'finding' water for a farmer. Before the borehole was drilled he claimed that his rod told him that water was flowing at three specific depths and that the flow was 800 gallons per hour of which only 400 gallons per hour would be obtained by the farmer. At one stage of the drilling the farmer measured the rate as 240 gallons per hour. Donovan later claimed that they were getting the 400 gallons he had promised. But we were never told the depth. During a phone conversation I had with Howerd Perks, producer of the programmes, he told me that Donovan wouldn't claim to be able to pass a controlled test in which water was on or just below the surface. He only finds deep flowing water. A proper test of Donovan would therefore be difficult, and expensive. Too bad.

In the second programme we saw Donovan demonstrating his wonderful ability to dowse a ley line which he claimed was eminating from a standing stone on the Isles of Scilly. Apparently, one of the people present was able to inhibit the ley line. When Donovan walked between this man and the stone, his dowsing rod moved. But when he walked on the other side of the man, his rod failed to move. Now that's something which could be tested. After the final programme, by which time I had done some brief research, I wrote a letter to *Radio Times*, part of which follows. It outlines some of the things I learned:

'In a conversation I had with producer Howard Perks he told me that his recent trio of programmes *Donovan The Diviner* were not intended to prove or disprove divining, but were simply to tell the story of an interesting man. Howard is keen to see his programmes start a discussion on divining and hopefully to encourage someone to take a serious look at the subject in an attempt to explain it. May I start this discussion by making a view points, and suggesting a suitable scientific test.

Donovan's 'findings' were entirely subjective. His talk of underground water in general and force lines in particular were mainly unproven. Such chances as there were to include proof—either negative or positive—were not taken in the programme. This was in accordance with Howard Perks's intentions to avoid judgement on the issue. However, the 'finding' of water on Peter Kent's farm was perhaps not due to divining. What's the chance of finding water anywhere in Cornwall? The programme didn't tell us, but a hydrogeologist working in the West Country informs me that it is about 90% anywhere but the Lizard area. Donovan and his wife predicted a flow of about 400 gallons per hour. But this is roughly the amount which would normally be expected from such a borehole. On Peter Kent's farm it was actually measured at about 370 gallons. But—again—the programme didn't tell us these things. The water engineer who measured the flow told me.

Having spent the best part of ninety minutes promoting a belief in dowsing, if the BBC would now like to test Donovan there are two ways to do so. The first is by drilling about ten boreholes at locations divined by him. In this case, finding 'dry' spots would be the best test. About eight out of ten would be a good score. The second way would be to test Donovan's ability to find ley-lines. If Donovan and the BBC will agree to participate I have designed a suitable test. It's cheap too. So, let's here from Donovan and the BBC's Science Department and either prove divining or put it to rest'.

My letter wasn't printed but I am consoled by the fact that no other letters about this series were printed either. I was taking a chance writing a critical letter about Donovan who may have a royal coat of arms on his twig, for it was reported in the *London Standard* of 30 July 1988 that, sharing a rod with Wilkins, the Clown Prince found water 'at the exact spot where ... [Wilkins] ... already knew there was water'. My next address might be c/o The Tower of London.

Michael Hutchinson is secretary of the British Committee, and UK distributor for Prometheus Books.

Reviews

Exploring alternate states

Hilary Evans, *Alternate States of Consciousness: Unself, Otherself and Superself*, Aquarian Press 1989, £6.99, 256 pp, index, paperback.

I found this book to be thought-provoking, wide-ranging, engagingly written, and in many ways, absolutely infuriating to the honest skeptic; the subject (comprising dreams, religious ecstasies, hypnotic trances, sleepwalking, hallucinations, out-of-body and near-death experiences, and UFO contacts—among many others!) is vast and of perennial interest to everyone (parapsychologist or otherwise) with an interest in the vagaries of the human mind. The treatment is at length, and Mr Evans is by no means a credulous believer in the paranormal; yet much of his fascinating book is vitiated by assumptions put forward and made use of without any sort of critical scrutiny.

To begin with, the press release describes the author as 'Director of the Mary Evans Picture Library, ... a lifelong interest in the paranormal ... a recognised expert in the field.' I wondered, 'recognised by whom? With what training and qualifications? With what field experience?'—unfortunately the book is silent on these matters. Mr Evans is by no means ready to swallow whole the New Age ideas of many of the groups he quotes—for instance, he seeks an internal (psychological) explanation for experiences traditionally described as mediumship and spirit possession (Chapter 1) and contact with UFOs (Chapter 4)—but on the other hand he seems quite happy with the concepts of psychic healing (Chapter 7) and ESP phenomena associated with mesmeric or hypnotic trances (Chapter 3), and seems unaware of the many existing skeptical critiques of such accounts.

Again, many of the examples cited in the book are taken from accounts of the last century, or the early days of the SPR, or from the works of contemporary parapsychologists, with no indication that reports of this nature have often failed to come up to serious critical scrutiny. Finally, interested psychologists will be annoyed by his blanket use of the term 'subconscious self' to cover all mental or psychophysical processes taking place outside the domain of our normal consciousness, and implying that all such processes comprise a single, 'alternative' mental organisation opposed to the conscious one; many different terms have been proposed in the past by different investigators, such as 'unconscious', 'co-conscious', and so on, and most modern workers in the field would distinguish several strata of our inner life, from the traumas of our earliest years and the roots of autonomic ('psychosomatic') illness to the sources of dreams and artistic or scientific creativity. In addition, no mention is made of the fact that serious doubt has recently been cast on the validity of, say, Freud's approach to unconscious mental phenomena (many of his patients seem on examination not to have been cured at all, in spite of the traditional accounts), and also of conventional ideas about hypnosis and multiple personalities, both of which have been seriously called into question.

Having said all that, however, I must go on to point out the book's merits. The author himself states clearly that he wrote it out of ignorance, that is, in an attempt to throw light on a subject about which very little can actually be said that is definite or scientific, so that the above-mentioned assumptions are simply put forward as working hypotheses, to be tested and perhaps in due course amended or discarded.

In practice apart from occasional references to 'psychic' phenomena (which he is in fact careful to define as 'any phenomena which seem to go beyond what the mind is currently thought able to do', without any necessary reference to the supernatural), the author consistently pursues the idea of understanding 'Alternate States of Consciousness', from dreams to UFO contact-experiences and religious ecstasies, in a way that might almost be called purely naturalistic, that is, in terms of solely the (unconscious) mental processes (including needs, desires, motivations, cultural settings, and psychophysiological states) for those undergoing such experiences. (Phew! What a long winded summary!) But it would be very easy, and very unfair, to dismiss Mr Evans' thesis as simply stating that these Alternate States of Conciousness (ASCs) are no more (and presumably no more important) than slightly overblown daydreams, when in fact his central idea is much more important, namely that all these ASCs have a part to play in the inner life of their possessors, that is, in fact, that they are (psychologically) *meaningful*.

Let me illustrate this concept with a very mundane, and personal example. A friend of mine was dreading the prospect of a singing examination; on the morning thereof, however, she found that she had lost her voice. There was nothing physically ('organically') wrong with her throat, that the doctor diagnosed a 'functional' (also called 'psychogenic' or 'psychosomatic') ailment, due to her anxiety as the examination drew closer. This really means that her loss of voice had a meaning or purpose—it enabled her to avoid the dreaded examination. My friend was not shamming; she had genuinely lost her voice, and genuinely had no idea that she had done it to avoid the

examination, or indeed any idea how she had done it in the first place. Psychologists of all but the most blatantly materialistic school would agree that her loss of voice was somehow caused by her unconscious desire to miss the test; that is, that an unconscious (or subconscious) aspect of her personality had acted quite deliberately to spare her the forthcoming ordeal, almost without the approval of her conscious self.

This concept, of an unconscious (or subconscious) self which acts purposefully yet outside the scrutiny of our everyday, conscious personalities, has been extended to include the idea of a subconscious source for dreams and various forms (waking or sleeping) of creative inspiration in art, science, mathematics, and perhaps the religious life. Mr Evans calls this unknown agent 'the Producer'—underlining the fact that dreams and creative insights are presented to us in the form of images (words and/or pictures), rather like a stage or radio play; we may take part or merely observe, but something (or someone!) else seems to write the script and present the completed material for our enjoyment and sometimes edification. In hypnotic states, the Producer seems to accept guidance from outside ourselves, while in other cases the stimulus seems to arise from our own inner needs and desires, possibly unconscious ones as in the example given above. Mr Evans proceeds to apply this idea to the full range of ASCs, implying that they all represent creative dramas composed, for a (possibly obscure) purpose by our unconscious Producers and presented (often apparently as a real experience) to our conscious selves which often take these 'playlets' completely at their face value.

The theme that the unconscious mediates healing, guidance and inspiration via symbolic figures, imagery and drama will of course be familiar to Jungians, but Mr Evans pursues his approach without recourse to any particular doctrinal formulation. (1) If the unconscious can cause (psychosomatic) diseases and anxiety states, then it can also cure them, possibly by means of inspirational dramas involving religious figures, of 'Beings from Outer Space'—and does so, from the healing visions at Lourdes, the convulsants of the Jansenist sect, the possessed priests of the Voodoo religion or many 'channelers' who transmit wisdom and healing energy from the departed spirits or the inhabitants of UFOs. (2) Rosemary Brown believes her compositions reach her through the good graces of musicians 'currently on the other side' (no longer composing, but decomposing, as the gruesome old joke has it!), where others might receive inspiration from dreams, or just 'the Muse'. (3) Many UFO 'contact' stories include passage through a silvery tunnel; this is also found in many Near Death Experiences, which are noted for the culture-bound nature of their content (celestial beings and cities), and in many drug-induced hallucinations, although Mr Evans omits to mention the latter. (4) Many so-called 'past-life' experiences, for example that of Arnold Bloxham's 'Jane Evans' who described Roman Britain, have been successfully traced to actual books or plays, or no doubt forgotten by the conscious mind of the 'past life' traveller, but remembered and somehow worked up into convincingly realistic 'recall' form by the subconscious self. In these, and religious visions such as that of Bernadette Soubirious at Lourdes, the subconscious motivation may simply be to gain some sense of personal significance or importance in the scheme of things.

Mr Evans does not really succeed in finding a theory to explain all these (very different) Alternate State of Consciousness, but one cannot blame him for that; he has done a very creditable job of amassing material from many different disciplines, and his book, with all the qualifications I began this article by mentioning, should really be regarded as a pioneering or trail-blazing exercise in the field; inevitably many of his ideas, assumptions, and even conclusions will have to be modified or simply thrown out of the window as the investigation progresses. However, that there should be any sort of consistent investigation at all of these phenomena, on lines distinct from either a credulous literalism or a sterile 'scientific' skepticism, seems to depend very heavily on this book, for I do not know of any others in this line. So, whether you agree or disagree with Mr Evans, at least read his book, if only to rid yourself of narrow intellectual parochialism. Then write your own sequel! This is the only way we shall ever begin to understand our Alternate States of Consciousness.

—Mike Rutter

Formation of the Wessex Skeptics

Robin Allen writes from Southampton:

We intend to establish a skeptics group in the southern area centred in Southampton. Our tentative name is the *Wessex Skeptics*. Our aims will be commensurate with those of CSICOP, the Manchester Skeptics and similar groups, and we hope to emphasise the active side of skepticism.

Media interest in high, and we have an excellent chance of developing a prominent public profile in the region.

If you're interested in joing the group, or you would like more information, please contact Robin Allen (0703-5922084), Martin Hempstead (0703-595000 ext. 2696), or Chris Parker (0703-592378), or write to Robin Allen, Department of Physics, Southampton University, Highfield, Southampton, SO9 5NH.

Please help us make the Wessex Skeptics a success.

Letters

Convinced by pyschometry

This letter was written to clear my conscience. I am a humanist, and come down like the proverbial ton of bricks on the bizarre claims of the ultra-gullible, so feel it unfair and intellectually dishonest if I don't report my own unusual experiences. I have no *desire* for such experiences—I find the world of science as it is quite complicated enough! But equally I find it irritating to discover that the rightly skeptical sometimes possess minds just as bigotted and closed as those of the fundamentally religious.

A recent article by Susan Blackmore in the *New Humanist* reminded me of my experiences with mediums, whom I'd consulted largely because my late husband, from being a complete skeptic, had become convinced of the paranormal. Amidst a generous amount of waffle, several accurate, specific, unusual and highly personal items of information were passed on to me, information that I *know* couldn't have been acquired in any of the normal ways. Incidentally, my first experience was of a medium picking me out of a large and anonymous audience and saying that my husband had died six months previously at the age of 44, and that sitting next to me was my sister. This was correct, and there had been no 'fishing'.

However, I wish to confine myself to recounting three instances of my encounters with psychometry, where a medium holds an article belonging to the client and tells what he is 'picking up' from it.

On the first occasion, a friend and I, wishing to make matters more difficult for the medium, decided that I would take two of my own possessions (instead of one each). When the medium picked up the first of these articles, he spoke for a while on matters which were relevant to me but which, while not applicable to everyone, could have referred to quite a number of other people. What was interesting ocurred when he held the second of my articles. He virtually repeated what he'd said before (which was quite different from what he'd said—or was to say—to the others in the group), looked puzzled, and then turned to me, saying, 'This is yours as well, isn't it?'

I'd taken a letter in a sealed envelope on the second ocassion (a different medium) and was told that it contained a confirmation of my appointment to a job 'which has some connection withh what goes on in this building'. It was precisely that—confirmation of a secretarial post at the Churches' Fellowship for Psychic and Spiritual Studies. (I have neve been a 'believer', but thought that this might be a good way of acquiring further information on the 'paranormal'.) For the third session, I'd taken another letter in a sealed envelope, this time belonging to a friend who had been a victim of poison-pen letters. This letter wasn't one of them, but from someone she had suspected. The medium held it, quickly put it down, and said that she didn't want to have anything to do with it—'There's evil connected with this.'

I am a fairly skeptical person and I have no axe to grind except that of impatiality—I'm just puzzled and curious—but I wish that the many people who automatically dismiss the paranormal would themselves undertake some personal investigations.Theycould be in for a surprise!

Vivien Gibson
London

The British & Irish Skeptic always welcomes readers' experiences of the 'paranormal'. While we lack the details to comment directly on Mrs Gibson's experiences, we must note that experience has shown that the activities of mediums can often be adequately explained without resorting to claims of 'paranormal' powers. Perhaps readers would volunteer to carry out similar personal investigations, and report their findings to the British & Irish Skeptic?—Eds.

A sobering thought

Homoeopathy tells us that the application of drugs in minute quantities in no way impairs their efficacy, indeed, the smaller the dose, the greater the potency. Well, I have just drunk two cans of low alcohol beer.

Drunk as a Lord? No, I am afraid not...

John Lord
Guildford

The curse of the President

Now there's a thing; isn't there supposed to be a curse on the office of president of the United States, whereby any incumbent elected in a year divisible by 20 is doomed to die while still in that office? It affected Harrison (1840, died of pneumonia contracted during his acceptance speech), Lincoln (1860, shot), Garfield (1880, shot), McKinley (1900, shot), Harding (1920, died on campaign trail), Roosevelt (1940, died), and Kennedy (1960, shot), and was due to hit Reagan too (1980). As far as I can tell, it didn't (although he was shot). Does this mean the 'curse' is lifted? I can certainly remember some discussion at the time of Reagan's election about how long he would last before being struck down. No doubt someone has a good (i.e., amusing) explanation for its apparent failure this time. Maybe it broke after the standard century-long warranty period expired. So much for Victorian craftsmanship.

Frank Wales
Leeds

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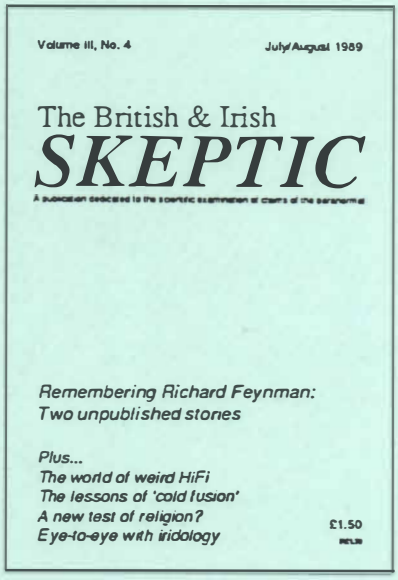

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