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The British & Irish SKEPTIC

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

The Nullarbor UFO mystery - solved
Science vs Religion
The Cultist's Defence
Skepticism: Universal or occasional?
The World of the Tarot

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Editors: Dr Steve Donnelly and Toby Howard

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Hits and Misses

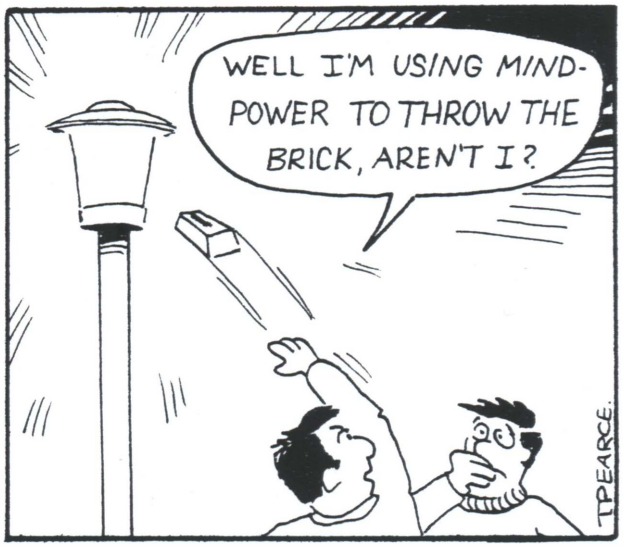
Steve Donnelly

Lights and Circles

Many reports have appeared in the newspapers over the summer on UFOs and crop circles with a number of them linking the two phenomena. One reason for this rash of articles is undoubtedly the publication, in July, of books on crop circles by Pat Delgado and Colin Andrews and by Terence Meaden but a number of the UFO articles seem to have been inspired by powerful searchlights used at celebrations in London. The *Independent* on 25 July reported that many people in London had seen lights moving in circles at high speed in the night sky and that this might have been explained by the lights used at a celebration of the 21st anniversary of London Weekend Television if it weren't for the fact that this did not in fact start until 24 hours later (unless all the people reporting sightings were clairvoyant, of course!) Another possible terrestrial explanation was apparently lights at a ball in north London but this seemed a less than satisfactory means of accounting for sightings in Brighton and Bognor. The *Evening Standard* a week later, commenting on UFO sightings earlier in the week, came to the conclusion that the Sky Tracker xenon searchlight system used at a rock star's birthday festivities was responsible. With the ambient light in the city obscuring the beams, observers would simply see the beam spots travelling round the undersides of clouds at high speed.

A similarly convincing explanation has not yet been found for the 151 new crop circles which have appeared this summer according to *Today* on 26 July. Articles appeared in the *Sunday Times*, the *Sunday Telegraph* and even in *Country Life* as well as the tabloids and many (im)possible explanations were put forward including holes in the ozone layer and rutting roes. Even in the U.S. the circles are big news with the *Wall Street Journal* on 29 August reporting that the Queen has been reading Delgado and Andrew's book and has 'sharply questioned Prime Minister Thatcher about the circles recently.'

But it was the *Independent* on 29 September which published the strangest article on this strange phenomenon. In the Kinsale Diary column, Stan Gebler Davis recorded the first observation of *SQUARE* crop circles (if you see what I mean). Admittedly, this was in the South of Ireland, not the South of England and as Davies suggested 'It could well be that Irish flying saucers are square. Why not?' Why not indeed?



Switch Off

Hilary Evans, author of the book *Altered States of Consciousness* reviewed in the last issue has sent us a flyer announcing the formation of a new organization with an unlikely title and an even more unlikely purpose. The organization's acronym is SLIDE which stands for Street Lamp Interference Data Exchange (really!) and its purpose is to gather reports of individual experiences of psychokinetic tampering with street lights. According to Mr Evans a number of people claim to be able sometimes to cause street lights to go on and off by paranormal means and he hopes to accumulate a body of data in the hope of stimulating some formal research projects on the phenomenon. Any reader who has personal experience of this or any related phenomenon is invited to contact SLIDE on 01 318 0034 (Fax 01 852 7211) and help shed some light on the subject.

Another Shroud Hypothesis

Believers in the miraculous origin of the Turin Shroud have to be congratulated for their ingeniousness and their persistence in the face of last year's carbon dating results. The *Christian Parapsychologist* in its September issue published a letter suggesting a new theory of how the shroud could be both genuine and of mediaeval origin at the same time. The letter from David and Rene Partridge puts forward the following untestable hypothesis: 'What may have happened is that in the early middle ages, the custodians of the original shroud discovered that it was in an advanced

stage of decay and disintegration. In an attempt to preserve it, a new length of linen was woven on a loom not wide enough to match the original, hence the necessity to add a strip at the side. The original shroud was then placed on top of the new one, and the two rolled or folded up together. At some time later when the shrouds were again inspected it was found that the original had disintegrated beyond the point at which it could be handled but the image on it had transferred faintly by contact onto the new shroud.' This has the virtue of simplicity compared with, for instance, the the theory that Christ's body emitted a pulse of neutrons at the moment of resurrection. On the other hand Joe Nickell's theory of mediaeval forgery by a type of brass rubbing technique (see B&IS 2.6) is simpler still and is consistent with all the evidence!

Dan Quayle in Space

An item in *New Scientist* on 9 September holds out the promise that if ever America's youthful, and well-briefed vice president makes it to the highest office the mysterious face on Mars (see *Hits & Misses*, B&IS III.1) may be treated with the seriousness it deserves. The Feedback section of the magazine published the following passage: 'As chairman of America's National Space Council, Vice President Dan Quayle plays a key role in directing the nation's space programme. It's good to learn that he also has a sense of humour. Interviewed on American television last month, Quayle was asked why the US intended to send astronauts to Mars. Because, he replied, Mars has canals. If it has canals, it must have water, and water means it must have air. And if it has air, then that means we can breathe there. As we said, it's good to learn that he has a sense of humour. What was particularly impressive was that he managed to keep a straight face.'

Funny Farms

The 'New Age' is big business in the United States but if an article in the *Wall Street Journal* on 25 July is to be believed, Europe is leading the world with one essentially New Age activity, biodynamic farming. This is essentially organic farming but with a spiritual or cosmic aspect to it (the word is cosmic not comic although sometimes it is hard to tell). For instance, seeds may be sown two days before the full moon to 'exploit its gravitational pull'. And the planets may assist in other ways: 'When Uranus is at right angles to another planet expect lots of thunderstorms;' (What, on every farm on Earth?!) 'when Neptune is, count on an earthquake.'

According to the article, the idea of biodynamics originated in Europe but is now gaining popularity in the US with some American farms exporting biodynamic produce to Europe. In the Netherlands, apparently, the government pays for agents to teach biodynamic methods to farmers. This is not yet happening in the US but farmers are beginning to see the financial advantages of 'getting attuned to the spiritual'. A cosmically-attuned cabbage may not taste better but it may sell at several times the price of its unenlightened brothers and sisters.

On the other hand, a number of biodynamic cures for pest problems seem worse than the pests. Serena Wyatt, a farmer in California, for instance, burned gopher skins last year 'to discourage the critters from bothering her apple trees'. Then she began to have problems with snails gnawing on some of her other crops. This problem was cured by collecting five gallons of snails and stewing them in a pot of water for a month. 'The preparations definitely work' claimed Serena but the smell of the resulting brew which was smeared on her orange trees was not entirely pleasant.

Compost is also of vital importance to biodynamic farmers. Alan York, another Californian farmer, makes his compost from 'dandelions aged in cow membrane, yarrow blossoms that have lain all winter in a stag bladder and oak bark that has spent the solstice in an animal skull buried by a stream.' For liquid fertilizer he dumps 'a handful of cow manure winter-seasoned in a cow horn into a large barrel where it is mixed with water warmed to human body temperature.'

It all sounds like a load of s**t to me!

Fingers and Bumps

Tented Arch

Whorl

Personality analysis seems to be an increasingly popular and profitable activity with psychometric testing being used to help select business executives and astronauts and, increasingly, totally unproven techniques such as graphology being used to screen job applicants by personnel departments in some firms. According to *Family Circle's* August issue, fingerprinting may also be used to determine personality traits—and not just in the sense that a copy of one's prints on a Scotland Yard data bank is an indication of criminal tendencies! The article explains how to take fingerprints using shoe polish, lipstick or an ink-pad (my pad or yours?) and describes six specific features which give indications of particular types of personality. For instance a 'tented arch' (see illustration above) denotes enthusiasm and a need for chal-

lenge to fire the imagination whereas the rather similar looking 'whorl' is the sign of a fixed, inflexible attitude.

Meanwhile, amongst the alternative medicine community an old system of personality analysis has been revived and renamed and is now being employed as a healing technique. According to the *Scotsman* on 18 July craniosacral therapy, which is related to phrenology (or feeling the bumps), can be applied to a number of medical conditions. These include hormone imbalances, respiratory and digestive disorders and auto-immune diseases. The technique consists of tuning into the patients craniosacral rhythm—a kind of breathing motion of the head. 'This rhythm is considered to be one of the three major natural body rhythms, the others being breathing and heartbeat'. The 'healer' picks up an awareness of unusual patterns and energy blocks in the craniosacral rhythm and by manipulation releases tensions and allows the patient to heal himself. The technique was invented 100 years ago when an osteopath named William Sutherland had to be hospitalized after carrying out experiments which involved clamping his head in a vice!

Personally, I feel that anyone who resorts to a method such as this to treat a serious illness needs his head examined!

Goodbye, Spanish Fly

If you are concerned about the rights of the 'alternative medicine' community to sell useless remedies at inflated prices you may soon have difficulty keeping your pecker up when a planned ban by the American Food and Drug Administration (FDA) goes ahead at the start of next year. The FDA has turned its attention to the sale of purported aphrodisiacs such as Spanish fly, ginseng root, fennel and mandrake root. According to the *Guardian* on 12 July, after seven years of deliberation the FDA concluded what many people already suspected—that products such as these do not enhance sexual performance or desire. Moreover they are not deemed to be 'safe and effective' as required by the drug law so that from 8 January 1990 they will be banned from sale in the US. Apparently the FDA did not themselves test the products but instead relied on the more boring technique of combing the medical literature on the subject.

Newman's Perpetual Marriage

For up-to-the minute information, consult... The Straight Dope, by Cecil Adams, in the *Chicago Reader*. One of Adams' many correspondents wrote in with information about inventor Joseph Newman's recent activities (see B&IS II.6 and III.2 for discussions of his perpetual motion machine). To quote Adams: 'According to the *Mississippi Press*, Newman says he was ordered by God to marry both his 30 year-old secretary and her 8 year-old daughter. Newman complied—God presided over the ceremony—and happily notified the world in a 12-page press release. (One copy was sent to the Ayatollah Khomeini.) The only problem—well, maybe not the *only* problem—is that Newman was already married to a third woman. Authorities promptly removed the eight-year-old from Joe's home, though he says that he has not consummated the marriage. Newman, who once ran for president on God's instructions, angrily declared that this shabby treatment was going to get God really PO'ed. 'I wouldn't be a bit surprised if this does not result that God will place misery upon the State of Mississippi... I can see the handwriting on the wall and the people of Mississippi had better wake up.'

Adams concludes, 'Clearly this is one wild and crazy guy. My previous opinion of the man stands abundantly confirmed.' We, at the B&IS, of course must take a more cautious view. A lunatic might still build a working machine... only, so far, to the best of our knowledge, Newman hasn't.

Whoops!!

The editor of *Psychic News* , Tony Ortzen, has written to us pointing out that in B&IS III.1 we mistakenly stated that *Psychic News* had reported that the well known astrologer, Russell Grant, had worked as a medium in the West Midlands. In fact, the article claimed that Mr Grant had worked as a medium in West *Middlesex* not the West Midlands. We should like to apologize to Russell Grant, *Psychic News* and the inhabitants of the West Midlands for any embarrassment this mistake may have caused.

Hits & Misses was written with the kind assistance of Wendy Grossman

Elementary, my dear mystic

Medawc Williams

Searching for the elements

The Universe consists of Earth, Fire, Air and Water. Or else the Universe consists of Wood, Stone, Metal, Water and Fire. Or else the universe is based upon the ebb and flow of Ying (bright, male, positive) and Yang (dark, female, negative). Such, approximately, is the mystical view of things.

The first of these notions came from the ancient Greeks; the other two from the ancient Chinese. Almost all of the rival Greek philosophers accepted the notion of 'the four elements', and then tried to build complex theories about them. Some added a fifth; the Aether or Ether. The name was borrowed for a late-nineteenth century theory of electromagnetism; a theory that turned out to be quite incorrect. But it was the simpler four-element version that became popular, and tended to be used for alchemy, magic and mysticism. While the Greeks puzzled over their Four Elements, most of the ancient Chinese philosophers, with admirable open-mindedness, accepted both the Five Elements and Ying/Yang. These two notions got incorporated in most of their systems of mysticism and magic, including Taoism.

It was only in modern times, long after scientists had dropped Greek notions and worked out a periodic table for the hundred-odd elements that actually exist, that Westerners began to get interested in Chinese notions. In fact, it was only the Ying/Yang bit that became popular. The Chinese Five Elements are badly out of step with the Greek Four Elements, even by the undemanding standards that mystics are apt to apply. You only come across it in connections with Chinese astrology. (Chinese astrology is totally different from the Western Babylonian-derived system. But some people seem happy to use both.)

There are in fact still more systems of elements. There is a Buddhist system of Ground, Fire, Wind, Water and Void (Miyamoto Musashi, *A Book of Five Rings*, Fontana 1974, page 108), which sounds as if it is related to the Greek system. And the Bardaisan, a minor sect of Gnostic Christains, had a system of Fire, Wind, Water, Light and Darkness (Steve Runciman, *The Medieval Manichees*, Cambridge University Press 1982, page 11).

The five systems are illustrated side by side in the table. Now each of these systems has a bit of truth in it. The same notions kept occuring to different human groups, or were borrowed and modified. The Greeks correctly recognised the difference between solid, liquid and gaseous. The Chinese correctly recognised the difference between non-metals, metals and organic matter. Light and dark is less good; darkness is merely the absense of visible light. Beings who saw only infra-red light would have a different notion of what was light and what was dark. Beings who saw ultra-violet, as many insects do, would have a different notion again.

Greek	*Chinese-1*	*Chinese-2*	*Buddhist*	*Bardaisan*
Earth	Stone	-	Ground	-
-	Metal	-	-	-
-	Wood	-	-	-
Fire	Fire	-	Fire	Fire
Air	-	-	Wind	Wind
Water	Water	-	Water	Water
-	-	Light	-	Light
-	-	Darkness		Darkness
-	-	-	Void	-
Aethert	-	-	-	-

The five systems

What should be obvious is that the very diversity of 'the elements' shows that none of them represent any very deep truth.

Medawc Williams is computer analyst of Welsh origin living in London.

Open Lecture

On Thursday 7 December 1989, Dr John Lord will give an 'open lecture' at the University of Surrey, Guildford, entitled **Parapsychology: science, protoscience, or pseudoscience?** The talk will look at the scientific status of parapsychology: after a century of experimental work, it is still a controversial subject, but does it have anything truly scientific to offer? Can we expect a major breakthrough, or are its results nothing more than a series of anomalies? The lecture will be held at 1 p.m. in Theatre D of the University's Lecture Theatre Block. For further details contact John Lord (Office Telephone 0483 571281, ext. 2874, or email LIB015@UK.AC.SURREY.SYSB).

Erratum

Due to an editorial hiccup (by the name of Toby Howard) in *Hits & Misses* in the previous issue the final eleven lines of an item on iridology (Pupils Fail the Test) were excised and grafted onto the end of an item on palmistry (On the Right Lines).

Science vs Religion

Barend Vlaardingbroek

A mythical confrontation?

'Do you believe in science or religion?' is a not uncommon question amongst layfolk caught in the crossfire between, for example, biological and cosmological evolution, and creationism. Creationism has made one largely unrecognised major inroad: it has managed to create a broad dichotomy in the public mind, which has on the whole responded according to the 'two sides to every argument' sense of fair play and concomitantly cocked an ear to proponents of the 'other view'. It is my assertion, however, that the very issue of 'science v religion' is as mythical as the charming creation-stories of many a mythology in that creationist are not all representative of 'religion' in its global sense.

Just what 'religion' is can be debated at great length by scholars in the field of Comparative Religion, and modern scholarship does not generally insist on a theistic element. If we stick to a theocentric concept of religion (the common lay view), however, we note that, of the world's approximately five and a half billion people, roughly four and a half billion (probably more) are implicitly or explicitly 'religious', either in the monotheistic, polytheistic or pantheistic fashion. How representative are creationists of this teeming mass of religiosity?

Ignoring so-called primitive religion (animism, totemism etc.), most adherents of which have been influenced by the expansion of the 'major' faiths (principally Christianity, Islam and Buddhism), present-day global religion can be divided into two phyllogenetic groups: the Hindu/Buddhist complex, and the Judaism/Christian/Islam complex.

To deal with Hinduism/Buddhism first, the 'great controversy' between science and religion appears to be virtually absent. Many 'cultural Hindus' and 'cultural Buddhists' are technologically underdeveloped people with understandable mistrust of new, imported ideas, and the amalgamation of these religions with pre-existing belief systems has on occasion given rise to active xenophobia. But a reading of the major scriptures of these cultural/belief systems, particularly the Upanisadic writings and the Tripitaka, reveals evolutionary concepts pre-dating the dawn of western civilization, particularly in the field of cosmology. Both systems generally view the universe as cyclic, in terms remarkably close to the eternally-expanding-and-contracting version of the Big Bang Theory. Organic evolution is not as clearly foreshadowed, but the doctrine of reincarnation renders consideration of this a non- issue; Hindus regard the soul as transmigrating between any given forms of life, and God himself as having animal incarnations; while to Buddhists, who may or may not be theistic, organic evolution slots in rather nicely with the idea of the 'striving for perfection' inherent in all life. Present-day opposition to cosmological or organic evolution from Hindu and Buddhist quarters is a rarity, if it exists at all, for there is no possible doctrinal basis for it.

Turning now to the Judaic/Christian/Muslim family, we start narrowing down the problem area. These religions are strictly monotheistic, regard the development of the universe as linear (i.e. discrete beginning and end, implying purpose), and unlike the Hindu/Buddhist family, possess scriptures common to all their sects and traditionally regarded as the infallible revelation of God. Nevertheless, Judaism and Christianity have, on the whole, come to terms with branches of science dealing with origins. The situation for 'liberal Islam' is similar in some parts of the world, but on a simple numbers basis Islam is a tough nut for science to crack.

However, let us focus on Christianity, which is the religion most lay people equate with 'religion' per se. The initial response of Christendom to Darwin is well known, but once the heat subsided, cooler minds went to work. Catholicism was reconciled to evolution largely due to the work of Teilhard de Chardin; Catholicism did not, after all, have the same stake in the literal inerrancy of the Bible as did Protestantism (space prohibits my elaborating on this point, but it is explained in numerous texts on comparative Religion/History of Religion). Mainstream Protestant churches, their brain-cells prodded by men like John Robinson and New Zealand skeptics John Morton and Lloyd Geering, also came round to the realisation that the Bible is not a science textbook.

Where, then, do we find the elusive death-struggle between religion and science? Of our four and a half-odd billion 'religious folk' we have accounted for around 4 billion! (Admittedly tongue- in-cheek, as many people, speaking globally, have so little knowledge of the issue that they effectively have no opinion. But the point is made). The answer is, of course: in pockets of fundamentalism found in Judaism, Christianity, and Islam (admittedly large 'pockets' for the third of these).

There is no great battle between 'religion' and science, but there is between fundamentalism and science, but not just science. Fundamentalism is a phenomenon that crosses cultural, ethnic and religious boundaries, being exclusive to no one group, but be-

ing remarkably homogeneous as a psychological and sociological entity. Fundamentalists, be they Judaic, Christian or Muslim (the parent religion only provides the back-drop), are not only at loggerheads with evolution but with the modern world as a whole. They are essentially monomaniacal xenophobics; militant traditionalists relying on their sure-and-fast representation of ultimate truth for psychological security in a world changing at a rate with which they cannot cope. They are not creationists in isolation. As a group, they are fiercely partiarchal, and oppose social tendencies favouring the equality of women; they are paranoid about State education, especially for their daughters; they tend to be extremely intolerant of other value-systems, lifestyles, and religious beliefs. They are also very aggressive, and their technophobia is reversed when it comes to military hardware with which to give their pagan or heretic enemies a thrashing. These comments do not apply to all fundamentalists, but they do apply to a great many. The point, purely and simply, is that 'anti-evolution' sentiments are part of a package which almost invariably includes anti-abortion, anti-women's rights, and anti-educational feelings as well.

In summary, the 'science vs religion', specifically evolution vs religion, 'debate' is largely a fiction. It is kept alive by creationists because this appears to create a 'other side of the argument' niche for them to occupy. The reality of the matter is that there has never been an inherent incompatability arising from doctrinal considerations between evolutionary science and the religions of the Far East (Hinduism and Buddhism), and that mainstream Judaism and Christianity, and possibly Islam, have long accommodated scientific theories pertaining to origins. The mythical controversy is between evolutionary science and pockets of fundamentalism found mainly in Judaism, Christianity and Islam, and must be put into sociological perspective by recognising that anti-evolutionism represents only a small part of the anti-modern-worldism characteristic of this personality type.

Barend Vlaardingbroek is a skeptic living in New Zealand.

This article first appeared in the New Zealand Skeptic, and is reprinted with kind permission.

Next Issue

To improve the shelf-life of the *British & Irish Skeptic*, and make it more acceptable to retailers, each issue needs to appear at the very beginning of its two month period. As a speedy means of achieving this the next issue will be **Volume IV, No. 1: January/February 1990.** There will be no November/December 1989 issue—but **don't worry!** subscribers will still receive the correct number of issues.

The Cultist's Defence

Anthony Garrett

One night, at a loose end during an overseas conference, I was approached by a young man asking if I wanted to take a personality test. Since I had just passed the town's Scientology headquarters, I had a fair idea of who was behind this. On the Tottenham Court Road, I always decline the offer; but this time, for want of entertainment, and being clued up on scientology, I accepted. In the next three hours I learned very little about scientology that I had not already known—though a skeptic is a heavily atypical subject—but a great deal about arguing techniques. (Anyone wanting to spot and counter dirty conversational tricks should read Robert Thouless' *Straight and Crooked Thinking*. The less scrupulous can use it to deploy them.) Scientology's street preachers are well drilled in answering awkward questions. I was only able to rattle 'Tim' when, abandoning the guise of a usual subject, I started asking about Clears, Thetans, E-meters, and other paraphernalia (the 'tech') of scientology. Tim could hardly have been clued up on these to the level I was, for very few can pay what scientology demands to reach it. He was desperate for me to name my sources, presumably because he had been spoon-fed ways to discredit each—no easy task when you aren't allowed the details. Since I can always go again, I feigned vagueness.

We eventually reached a stalemate. This occurred when Tim bypassed my arguments with the practical exhortation 'Just try it—it works!' This I call the Cultist's Defence. Since I hadn't tried it, I couldn't deny it. Nevertheless, I declined the offer. But I had a clear feeling of having come off the worse. The Cultist's Defence produces an impasse to the advantage of the cultist, for denial is closed-minded. To overcome it, the conversation must be restarted. This cannot be done with reference to only the belief system in question; but the Defence is used by a wide variety of cults. The wide use of the Defence turns out to be its flaw, for the correct counter is: 'But cult X also say theirs works, and it is based on something completely different. How can you both be right?' This gets dialogue underway again. The cultist then has a choice of responses: reply 1, 'X is rubbish!', is met with 'Why?' Reply 2 is more subtle: 'There are elements of truth in X as well, but my way is better. Of course, X-ists, poor things, don't know that.' The response to this is to ask *why* brand X is inferior. The general strategy is now apparent, and in all cases you are back in the game.

Of course, you will never convince cultists by these means that they are talking nonsense. The important thing is to prevent their spreading. But if you have an evening spare (*don't* go to a weekend course, where sleep deprivation can assault you), you may sharpen your powers of persuasion for the future.

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

Scepticism: universal or occasional?

Antony Flew

Should there be limits to our scepticism?

In 'Having faith in skepticism' (B&IS III.4) Dr Nick Beard first argues himself into agreement with the unqualified preliminary conclusion of Descartes: 'We must surely, ... , doubt even the evidence of our senses.' He then asks: 'How can such scepticism, such doubt, be ruthlessly applied without falling into the pit of solipsism?' It is a fair question, which demands an answer from all of us priding ourselves on being skeptical about the claims of the paranormal.

Before proceeding to consider possible alternative escape routes we need, however, to correct Beard's misuse of the word 'solipsism'; here explicated as 'the belief that there is nothing of the existence of which we can be certain'. What the solipsist actually believes is that he or she is either the only thing which exists or the only thing which can be known to exist. The pit into which Beard wants to save us from falling is not that of solipsism but of total nescience. It was this which was opening up before Descartes when, in the first paragraph of Part IV of his *Discourse on the Method*, he concluded 'that it was necessary ... to reject as absolutely false everything as to which I could imagine the least ground for doubt, in order to see if afterwards there remained anything of my beliefs which was entirely certain'.

The sentence following is perhaps the most devastating in the whole literature of philosophy. For Descartes now supposes that he has sufficient reason for doubting: not only everything which he had formerly believed about the Universe around us—what successors came to call 'the External World'; but also the soundness of every argument which he had previously judged to be valid. That fatal, devastating sentence runs: 'Thus, because our senses sometimes deceive us, I wished to suppose that nothing is just as they cause us to imagine it to be; and, because there are men who deceive themselves in their reasonings, ... and judging that I was as subject to error as was any other, I rejected as false all the reasonings formerly accepted by me as demonstrations.'

The recommended route from this abyss of total nescience started from noticing that the 'truth I think, therefore I am was so certain and so assured that all the most extravagant suppositions brought forward by the skeptics were incapable of shaking it ... ' Descartes then proceeded to produce, 'without going out of himself', what he took to be proofs of the existence of a good God, who would not allow his human creatures to be systematically, totally, and inescapably deceived. So, provided only that we use the cognitive equipment which that good God has given us properly, i.e., in accordance with the correct Cartesian method now about to be expounded much certain knowledge is, after all, humanly attainable.

This might perhaps be all very well if we could persuade ourselves that those putative proofs of the existence of a 'good God who is no deceiver' can constitute valid demonstrations. But how is this possible, consistently with a continuing acceptance of the principles which originally led into the Cartesian chasm? If I have to reject 'all the reasonings formerly accepted by me as demonstrations', why not these new-fangled putative proofs likewise?

The truth is that it is not possible, and that, if it was rational indiscriminately to reject all those earlier reasonings, then we are in consistency required to reject the latter also. If it is really reason which beguiles us into the chasm, then it surely cannot also drop us the rope up which we can climb out? To escape irrecoverable catastrophe we need first to recognise that to doubt, to be skeptical, is not the same as just not to know, not to be certain. The person who doubts whether some particular proposition is true is not in the same situation as the person who simply does not know, one way or the other. For to support a claim to doubt, as opposed to a confession of mere nescience, you have to have some reason, some ground, for that doubt. The blunt fact is that you are simply not qualified to have doubts in any area about which you remain totally ignorant.

Descartes, of course, appreciated this point; a point, as my philosophical contemporaries would have said, about the logic of doubt. So he did offer what he mistook to be adequate warrant for his comprehensive, systematic doubt: both about all propositions about the furniture of 'the External World'; and about all arguments which he had previously held to be valid. The trouble was that that proffered warrant not merely did not sustain, instead it flatly contradicted, the very conclusions which Descartes wished to sustain. In a nutshell the nerve of his argument for both conclusions was that, because (I know that) I have sometimes been mistaken, therefore I never really have known or do know anything at all.

Such references to previous error would sufficiently support some salutary, skeptical moral about the need for extreme care and caution in our enquiries, the need for a constant alertness to detect and willingness to

admit our mistakes. What they cannot warrant, in as much as they actually presuppose the contrary, is the desired, grossly dogmatic conclusion that in these broad areas knowledge is unavailable.

Because we are committed to skepticism about, to having doubts about, the claims of the paranormal we are not thereby and necessarily committed also to scepticism, to having doubts about, anything else; much less everything else. For there are in this particular field excellent grounds for our doubts; whereas in some others and about some other matters there is absolutely no good reason to harbour any doubts whatever. Perhaps in conclusion it is just worth pointing out that the good grounds for doubt about the claims of the paranormal are of two kinds.

In the first place, there is the ever-lengthening list of exposures of deception and self-deception. For British and Irish students of my generation the most impressive and disturbing addition to that list has been the case of Dr S.G. Soal, whose work on Basil Shackleton even the hard-bitten Professor C.D. Broad had in a 1944 article in *Philosophy* railed as 'The Experimental Establishment of Telepathic Precognition'. Today everyone knows that Soal was himself faking the scores. Yet he had everyone fooled for years; including his longtime colleague in that research, Mrs K.M. Goldney.

In the second place, the putative phenomena of parapsychology are indeed implicitly defined as being such as we would normally consider that we had the best of experiential reason for ruling out as (not logically but) practically impossible. When, for instance, there has been yet another security leak in Washington or in some other NATO capital, does anyone—even among the believers in the reality of psi—seriously suggest that agents of the KGB or the GRU might have picked up the illicit information telepathically, and without ever leaving their offices in their embassies or at the UN? Again, after the accident in the nuclear power plant at Three Mile Island—the one which stimulated the display of bumper stickers reading, truly , 'More people died in the back of Ted Kennedy's car than at Three Mile Island!'—did anyone, even among the aficionados of psychokinesis, seriously suggest that this might have been an instance of PK sabotage?

Of course the true skeptic will willingly admit that it is perfectly conceivable that we have all been wrong in believing telepathy and PK to be impossible. What, however, we do have to insist upon before conceding the reality of either, before conceding that they must after all be possible since they do actually happen, is a repeatable demonstration. Yet with every year that passes the continuing failure of the parapsychologists to produce an algorithm for such a demonstration makes it ever less likely that they or their successors will one day succeed. And that continuing failure, after over a century of organized psychical research, itself constitutes the strongest warrant for our continuing, not unreasonably, in a stubborn skepticism.

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The Nullarbor UFO Mystery—Solved

A.T. Brunt

In January 1988, reports of UFO sightings over Australia's Nullarbor region were widely reported in the Australian media. The editor of Britain's Star 'newspaper' judged the story to be of sufficient interest to merit front page treatment in its January 22 edition. On the request of Popular Astronomy editor Ian Ridpath, retired meteorologist A.T. Brunt conducted an investigation into the sightings. This is his report.

Quite a few unusual lights have been sighted over Australia's Nullarbor Region, but none have received the notoriety of the two 1988 incidents. There are no towns of any size between Ceduna and Norseman or Kalgoolie (see Figure 1); most are railway sidings or road settlements of just a few people. Although the Eyre Highway runs closer to the coast than the Nullarbor Plain itself, the whole area has become known as the 'Nullarbor'. Between Madura and Eucla, an area known locally as 'The Basin', there is a line of 100m hills to the north, but east of Eucla the highway is located on higher ground.

It really is a perfect area for 'UFO' spotting. The dry, desert conditions give rise to decreased cloudiness, there are no city lights to distract the spotter, road and rail traffic is fairly sparse and the horizons are so flat and wide. There is an awesome splendour about the night skies there which has to be seen to be appreciated.

The first of the 1988 incidents occurred about 4.20a.m. Central Daylight Saving Time (CDST) on 20 January, when the Knowles family was travelling eastwards on the Eyre Highway. About 40km west of the Mundrabilla Roadhouse, they saw a light over the road ahead of them. At first they thought it was the light from a truck approaching them from the east, but the light became brighter and bigger, frightening them into taking evasive action. The driver of the car said that the light appeared and disappeared 'after jumping about a bit.' He described its shape 'like an egg in an eggcup and about 1 metre wide' and its colour as 'bright and white with a yellow centre.' His sketch of its shape was included in newspaper articles (See Figure 2).

There were other vehicles within 30 or 40km but the occupant of only one, a truck driven by Graham Henley, reported seeing any unusual light. He was driving east some distance ahead of the Knowles' vehicle and said he saw a light that was 'too high up to be another truck or vehicle', it was 'white and yellow in colour' and it 'disappeared and reappeared'. The crew of a tuna boat fishing in Bight waters 'hundreds of kilometres away' also saw a strange light on the same night and it was elongated in the vertical, but


THE STAR
THE NEWSPAPER THAT'S LIGHT YEARS AHEAD
20p
Family car is plucked into the air by aliens
UFO HIJACK TERROR

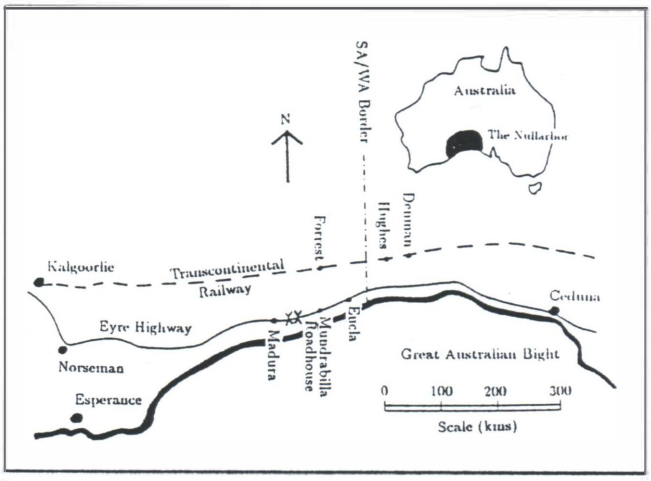


Figure 1: Location map: area of incidents marked X

no direction or elevation of this light was reported.

The Knowles family claimed that their car was picked up by the 'UFO' and as it was dumped, a tyre burst. They also claimed that a black ash covered the car and that there were indentations on the car's roof. They drove off at high speed and were obviously very distressed and somewhat hysterical when first interviewed.

Their vehicle was subjected to thorough inspections on several occasions by the Police and various UFO research groups in Australia, but none of these inspections showed anything unusual about the car. There was no black ash inside or outside the car; the only addition was a black deposit on the metal rims of the two front tyres, which was consistent with material from the brake linings. The rear right-hand tyre had burst in a normal manner, such as one would expect from a vehicle driven at high speed, leaving

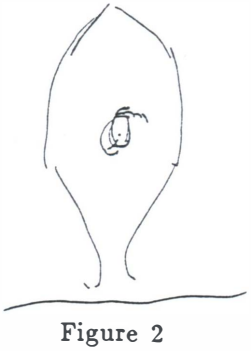
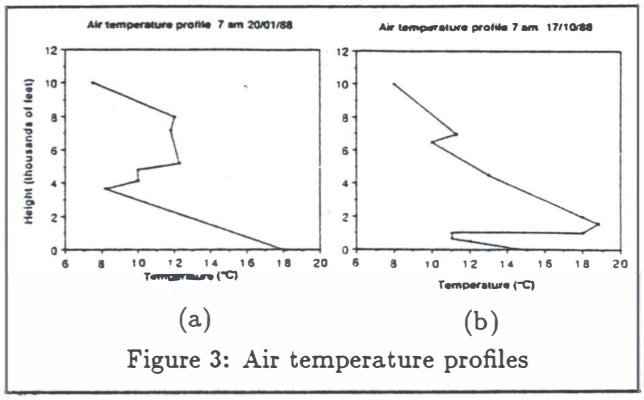


Figure 2



(a) (b)

Figure 3: Air temperature profiles

some rubber marks on the wheel arch. The dents on the roof were insignificant, and there was no proof that they were not there before the event. So there was nothing mysterious, only the unusual, egg-shaped white and yellow light they saw. The second incident occurred about 1 a.m. Central Standard Time on 17 October 1988 in roughly the same area. There seems no doubt that the first incident helped to precipitate the second. A bus, driven by Mr Peter Chapman with 25 passengers on board, was travelling westward along the Eyre Highway about 20km west of the Mundrabilla Roadhouse. The driver saw a light on the right-hand (northern) side of the bus and woke five of the passengers who also saw the light.

Newspaper reports said that the driver was 'terrified' but he evidently wasn't sufficiently terrified to waken the other 20 passengers sleeping in the bus. He didn't stop to observe the light, which he described as 'a bright white light which appeared to be hovering about 20m above ground and giving the impression that the light was moving.' He also said that 'the bright light followed the bus for about 10 miles as they travelled at high speed to escape.

One passenger said she saw the light in the driver's mirror; she thought 'it was a reflection of the headlights of a transport behind the coach.' The highway tends slightly south of due west in this sector and, with comments like 'on the right-hand side' and 'in the rear-view mirror', it does seem that the most likely direction of the light was from the north-east. No unusual effects on the bus and no unusual marks were reported. Also, there were no comments on the shape of the light which the driver said was 'not bright enough to illuminate the bus or the surroundings'.

Investigation of the weather conditions prevailing at the time of these incidents showed that each was characterised by fairly cloudless and calm conditions, although such conditions resulted from differing meteorological situations. In order to find a factor which might be common to both incidents, their salient features have been extracted and listed in Table 1 for comparison purposes. Apart from the fact that they both occurred on the Eyre Highway west of the Mundrabilla Roadhouse, there seems to be nothing which one could say was definitely common to both incidents.

That is, until the upper air temperature profiles are examined. In each case, the nearest temperature sounding (Forrest, about 100km to the south) showed a marked temperature inversion—that is, warmer air overlying colder air. These soundings are shown in Figures 3(a) and 3(b). Again, one can pick out differences in the two profiles, but the fact remains that on both occasions there were marked departures from the usual temperature decrease with height.

The meteorological situations are interesting. The surface weather chart for 6 a.m. CDST 20 January 1988 (Figure 4) shows a pronounced ridge of high pressure extending along the whole of the southern coastline of Western Australia from a High centred well west of Perth. This is quite unusual for a summer chart. The ridge was over 1000km in length and, as

Feature	20 Jan 1988 sighting	17 Oct 1988 sighting
Location	About 40km W of the Mundrabilla Roadhouse	About 20km W of the Mundrabilla Roadhouse
Time of year	Summer	Spring
Direction of travel of observers	East	West
Likely bearing of light	From east	From north west
Shape of light	Vertically elongated	Not specified
Claimed physical effects	Car lifted, black ash, etc	None
Prevailing weather conditions	Strong high pressure area W of Perth. Very pronounced ridge of high pressure along the whole southern coastline of W.A., extending as far east as Ceduna. 0–2 eighths low cloud, very light winds	High pressure area of the head of the Bight. Almost cloudless. 1-2 eighths high cloud. Very light winds, e.g., Forrest E 2 knots
Upper air temperature	Temperature inversion at Forrest 3800 to 5300 ft approx 5°. Greatest increase in temperature near the top of the inversion layer. Stronger inversion in the ridge of high pressure along the coast, e.g., Esperance 8°C	Marked temperature inversion 1000–1400 ft, 8°C at Forrest. Greatest change of temperature near bottom of inversion layer

Table 1: Comparison of the 1988 incidents

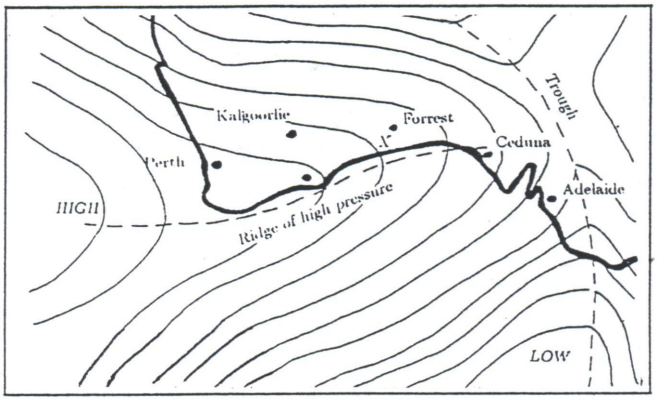


Figure 4: Weather chart for 6 a.m. CDST 20/1/88

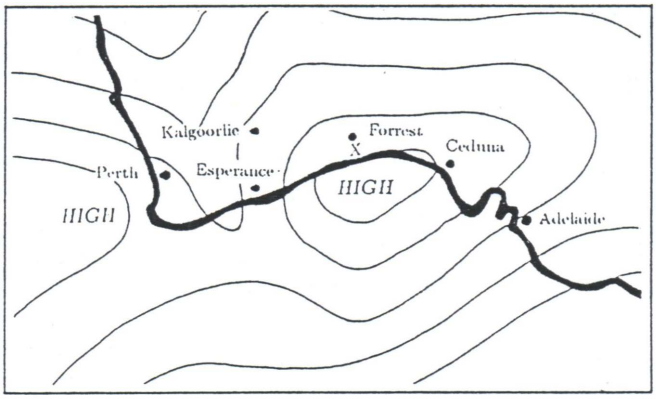


Figure 5: Weather chart for 3 a.m. CST 17/10/88

ridges associated with subsiding air and increased stability, it is understandable that the Forrest inversion was not an isolated one. In fact, inversions were evident over the whole 1000km (plus) length of the ridge from Ceduna to the SW corner of Western Australia, but they were much stronger along the coastline; for example, at Esperence the inversion was 8°C.

The surface chart for 3 a.m. CST 17 October 1988 (Figure 5) is a little different. It shows a large high pressure area over the head of the Great Australian Bight, again with evidence for widespread inversions over the Bight area. All the evidence showed that the inversion at Forrest was representative of the area where the sighting took place.

The refractive properties of inversions have been described in many meteorological texts, but, in view of the general lack of knowledge about meteorological optics (even among scientists) it is appropriate to summarise what refraction does in the lower levels of the atmosphere.

We all know that light travels in straight lines provided the medium is homogeneous. For most of the time, the atmosphere acts as a homogeneous medium, but there are exceptions when sharp discontinuities in

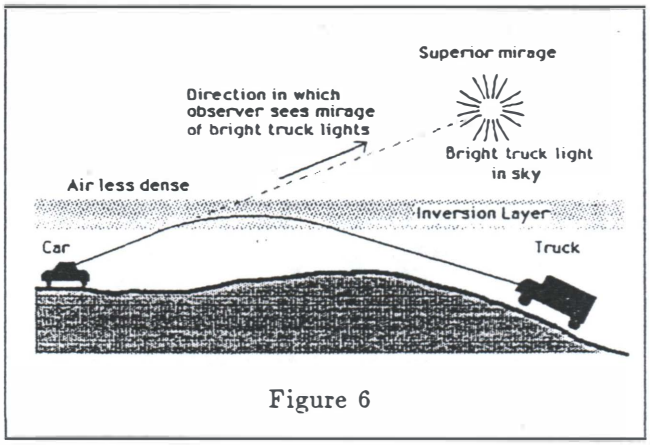


Figure 6

the vertical structure of the air cause aberrations in the straight line path. And one of the main discontinuities is a pronounced temperature inversion when there is a sharp density difference in the air above and below the inversion. This causes refraction and the path of light is bent downwards, giving the impression that the object is seen much higher than it really is.

For example, the wave fronts from a distant light source on the earth's surface will be quite regular until the upper part of the wave front passes through the inversion. Here the temperature is higher, the speed of light is fractionally greater, and this part of the wave front is speeded up. Such a distorted wave front (upper part speeded up, lower part retarded) may reach an observer ina suitable position and his eyes see an image (normal to the wave front) in a position which is well above where the surface light source actually is. Such an image is known as a superior mirage (see Figure 6).

The *Glossary of Meteorology* defines a mirage as 'a refraction phenomenon wherein an image of some object is made to appear displaced from its true position.' The key word is 'displaced', but it is important to realise that distortions of shape, colour, size and intensity also occur. These distortions obviously make identification of the object more difficult.

Even under the most steady meteorological conditions with a simple temperature profile, when it is possible to see a good identifiable mirage for many minutes, it should be stressed that the air is moving and the path taken by the light reaching the observer's eyes is subject to changing meteorological conditions. When the temperature profile is more complex, multiple images may appear, some in grossly distorted forms with unusual colouring. Some of the distorted forms can fool even those quite used to the characteristics of refracted images.

When either the observer or the object is in motion, the images can appear and disappear quite rapidly or they can seem to perform rapid gyrations creating the illusion of extraordinary spacecraft. In addition, interference between incident and re-

The most common forms of distortion (See Humphreys, *Physics of the Air*, 1929) are:

- Towering. This is an apparent vertical stretching which occurs when there is an increase of refraction with height within the inversion layer. The inversion on 20 January 1988 was of this type.
- Stooping. This is an apparent vertical shrinking which occurs when there is a decrease of refraction with height within the inversion layer. Under these conditions, spherical objects take on the appearance of disk-like 'flying saucers'.
- Inverted images. These occur when refraction in the upper part of the refractive layer decreases more rapidly with height than in the lower part.

fracted rays can produce complicated mirages whilst focussing of the rays can 'cause bright and dazzling images which jump about or even disappear at the slightest movement.'

When an inversion is horizontally extensive, such as in a long ridge of high pressure, it is possible for light rays to be bent several times following the shape of the earth's surface, in much the same way that radar ducting takes place. When there is a wide horizon and an extensive inversion, it is possible to see the mirage of a light which may be 100–150km away. The light is usually on the earth's surface but the refracted image (often distorted) can appear as a light at low elevations in the sky.

It is important to remember that the atmosphere can act as a lens under refractive conditions and the size and intensity of images can be magnified many times. The magnification can be so great that large objects, like mountains or islands have be 'seen' at sea over verified distances of up to 1000km (*The Marine Observer*, 1981). Each instance of long-distance mirages is associated with a pronounced and widespread inversion, such as those found in long ridges of high pressure.

Some of the best examples of refracted lights in Australia would be the 'Min-Min Lights' of Queensland. Invariably, there is never a sound or any physical trace when these ghostly lights are seen bobbing up and down above the treetops. In each case, there is ample evidence for a marked inversion and the direction of the ghostly light fits in with the direction of a distant stretch of highway, sometimes 100–150km away. The brighter lights come from truck spotlights at high beam (used to avoid kangaroos and wandering stock), but Min-Min lights have been known to be caused by distant cars. These bizarre lights in the sky are never seen on windy nights, or cloudy nights, only on the occasions when it is fairly calm and clear, the atmosphere being stable enough for inversions to occur.

And the Nullarbor lights are the same. You will never see them on windy or cloudy nights. On clear, calm nights passengers waiting at sidings on the long, straight transcontinental railway line have reported seeing the light of an approaching train for at least an hour before it actually arrived. At the normal train speed of 110 km per hour, people must be able to see the headlight of a train which would be at least 110km away at the time. It first appears as a light in the sky and only in the last 10 to 15 minutes does it 'come to earth', as it were. Australian National Railways advise that, at high beam, these lights are of approximately 2000 candle power; no wonder their refracted lights can be seen at such great distances over the flat Nullarbor. The Brown Mountain UFOs (Klass 1974) are good examples of refracted lights from American trains, but in much more irregular country.

The very scattered road traffic over the Nullarbor must also generate mirage-like lights in the sky, particularly some of the interstate trucks which are specially equipped for night travel. Campers on the Nullarbor report strange lights at times, some of which could perhaps be attributed to activities at the Woomera rocket range. It is interesting that one of Australia's best hoaxers, the Nullarbor Nymph (Geniece Brooker Scott) spent many nights posing as a wild girl living with kangaroos and confirmed that she has seen lights in the sky; she said 'they could be meteorites or satellites—or something else!'

To return to the 1988 incidents. The unusual lights seen on both occasions were obviously refracted images of distant light sources, because both occasions were associated with pronounced temperature inversions. If additional confirmation is needed, the light seen on 20 January 1988 'jumped about a bit' typical of refraction focussing and was elongated in the vertical, which fits the towering type of distortion one would expect from the inversion shape on that particular night. The inversion on 17 October 1988 should have given rise to a squat (horizontally elongated) image, but Mr Chapman did not specify its shape.

It is one thing to be confident about refraction causing an image in the sky, but quite another to find out what actually caused the light which was refracted. So much depends on the attitude of the light source and the height and strength of the inversion that it is difficult to specify what distance would result in the type of focussing necessary to produce a bright and dazzling image.

Let us consider the observed facts on both occasions. The Knowles family on 20 January saw the

light to the east which they 'first thought was a truck approaching from the east'. There were no bright astronomical bodies in that direction and the sun was 29° below the horizon; besides, its azimuth was 145°. There were, however, several vehicles, both eastbound and westbound on that section of the Eyre Highway at the time (Basterfield and Brooke, 1988). Although some of the other drivers reported no unusual lights, it should be remembered that this is typical of refracted lights.

It is difficult to determine which vehicle was in the correct position to permit focussing of the refracted light and cause a 'bright and dazzling image', but one cannot rule out a westbound vehicle descending into Eucla (100km to the east) because of its elevated position. A vehicle at that distance would not have been considered to be part of the incident.

This leads to the conclusion that the first impressions of the Knowles family were correct, i.e., that it was indeed 'a truck approaching from the east'. It was the distorted image of its headlights which was so frightening and bizarre. All the other things that happened to their vehicle were either of their own doing or their own imagination whilst in a state of fright, as none of their claims in this regard were substantiated by inspections of the vehicle.

The vertically elongated image observed by the crew of the tuna boat on the same night would obviously have been from a different light source. Nevertheless, the tuna boat was still near the ridge of high pressure and the same widespread inversion would have covered its position. So they too would have observed a refracted light in the sky but, without any direction indicators, it would be impossible to say what the light source was. The most obvious choice is another ship.

In the second incident, the light appeared to be 'hovering about 20m above the ground' and 'on the right-hand side of the bus', the most likely direction being from the north east. Basterfield (1988) identified the light source as being the planet Jupiter and indeed its position (azimuth 040°, elevation 26°) seems correct, especially as the observation was made over a line of low hills and the sky was almost cloudless. There is no doubt that refraction in the inversion layer would have changed this normally bright light into a distorted and enlarged image. In addition, it was recorded that the driver and passengers were aware that they were almost exactly in the area of the first incident nine months earlier and they certainly would have been looking for lights.

It is interesting that Australian National Railways advised that there was a westbound goods train between Denman and Hughes, approaching the WA/SA border at the precise time and date. The bearing of this light was 040° from the sighting position but the distance (170km) puts it slightly out or range, especially in view of the line of 100m hills between the headlight of the train and the observer. Nevertheless, mirages have been observed over that distance. In view of the fact that the bus driver and the passengers saw only one light, it must have been the planet Jupiter. They would not be the first to call planets 'UFOs'; this is quite easily done when refraction distorts their normal shape and intensity.

So, if anyone is looking for UFOs (strange lights) they should certainly try the wide open spaces of the Nullarbor. But stay near the highway as this is the best producer of unusual lights. Never choose windy nights or cloudy nights; it is necessary to have the faintly calm, clear nights which are indicative of inversion conditions when refraction occurs. Best of all, choose a night when the high pressure centre is near you or a long ridge of high pressure extends over you. Even though there is a roadside sign near the WA/SA border warning travellers to beware of UFOs, it is hoped that you will be better informed. There are quite a few occasions each year when pronounced inversions cover the area, so be on the look-out for them. However, the type of refraction focussing such as the Knowles family experienced is much rarer; the light source has to be at the right focal length and the height and length of the inversion have to be just right for a large dazzling image to appear.

If you see a strange light, stop, note the time and take rough bearings of the direction and elevation whilst watching its movement, reporting this to the nearest Police. There is no need to be alarmed or to panic like the Knowles family; no-one has ever been hurt by such lights. Rest assured, we are not being invaded by extra-terrestrial beings from wherever—the unusual lights are naturally occurring refraction phenomena. Many of the 'UFO' interpretations seem to come from people who ignore the known wonders of our atmosphere; they seem to be unaware that science fact is much more wonderful than 'UFO' fiction.

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The cards can't lie?

Mike Rutter

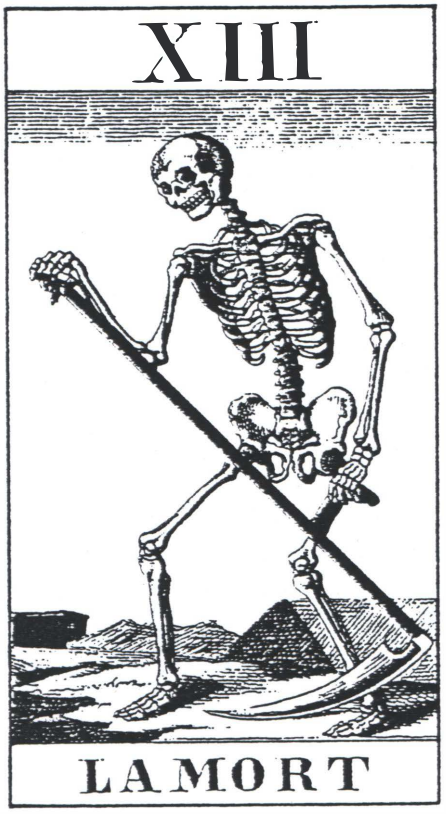
A look at the world of Tarot cards

We are all familiar with the use of playing cards in games or for divination, and perhaps have vague notions of their great antiquity. In fact, playing cards of the familiar sort first appeared in Europe at the end of the 14th century (they are not mentioned by Petrarch, Boccaccio, or Chaucer, all of whom wrote on games and gambling), and soon became so popular at all levels of society that the Church tried unavailingly to ban their use as an idle pastime, and indeed as a potential source of unorthodoxy; the evidence indicates that, right from the start, playing cards were used for divinatory purposes, and were already being referred to as 'The Devil's Prayer-Book'.

However, these were probably cards of the familiar sort, not necessarily those of the Tarot pack, which are first attested in the early 15th century. Many variations of both conventional and Tarot packs have occurred over the centuries, but modern Tarot packs consist of two parts: the first, a set of 56 cards, dividend into 4 suits of 14 (not 13) cards each—the 'Minor Arcana'—in principle similar to the conventional pack; and the second, an additional set of 22 cards bearing allegorical or symbolic pictures—the 'Major Arcana' or Tarot Trumps.

Conventional playing cards, in the familiar 4 suit pack, may derive from a set similar to the Tarot Minor Arcana. Here, each suit consists of 10 pip cards (Ace to Ten) together with 4 (not 3) court cards, which in the earliest packs represent King, Queen, Knight and Page (Knave or Jack); it appears that, in modern conventional English and French packs, the Knight and Page have amalgamated into the Jack, whereas in similar packs from Italy and Spain the Queen has been discarded, leaving King, Knight and Knave—also in modern German packs the court cards are King, Ober (Senior Officer) and Unter (Junior Officer). Later 'Magical' Tarot packs have changed the symbolism still further.

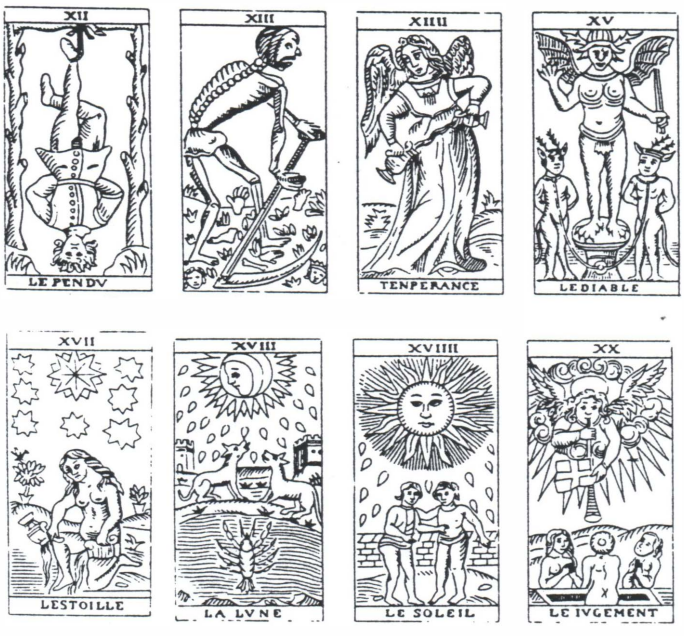
We are familiar with the conventional suits of English playing cards—Clubs, Hearts, Spades and Diamonds (I use this order for a reason). These designs seem to have been taken originally from the French conventional packs, which still have the suits of Trefles (Trefoils or Clover Leaves), Coeurs (Hearts), Piques (Pikes), and Carreaux (Diamond-shaped Tiles.) Standard Spanish and Italian packs have a different set of suit-names: Batons (Rods or Staves), Cups, Swords, and Money (Coins). Swords (Italian Spade, Spanish Espadas) presumably account for the English name of Spades, while Diamonds seem to be a compromise between the French shape, and the Spanish and Italian idea of Wealth.



Our packs have Hearts, instead of Cups—it has been suggested that this transformation stems from either a two-handled drinking-cup, which shows a distinctly heart-shaped profile, or the spiritual associations of Cups (i.e., Chalices); nobody knows for sure, so you may pick the one that most appeals! The earliest Tarot packs had suits of Rods (Wands, Batons, or Staves), Cups (Chalices), Swords, and Coins (Discs or Pentacles), after the Italian model; contemporary ('Magical') packs, still use some variant thereof. An Italian origin for the Tarot pack thus seems likely. The Major Arcana (Tarot Trumps, Atouts) are known in several versions, but the usual arrangement consists of 21 numbered cards, from 1 (the Juggler, or 'Magus') to 21 (the World), together with another, the Fool (traditionally unnumbered), which originally came last but which more recently has been placed at the start of the sequence (sometimes described as 'number 0'!). In modern conventional packs, the Fool perhaps survives as the Joker, the sole remaining Trump.

The other Trumps (2–20) are traditionally known as (some variant of) Papess, Empress, Emperor, Pope, Lovers, Chariot, Justice, Hermit, Wheel of Fortune, Strength, Hanged Man, Death (number 13!), Temperance, Devil, Tower, Star, Moon, Sun, and Judgement. (Many 'Esoteric' or 'Magical' packs, following the usage of the Golden Dawn, interchange Justice and Strength.)

'In Ancient times, perhaps there was a body of sages—priests, philosophers, magicians—who understood the esoteric secrets of the Universe. As they



knew the barbarians were going to overthrow their high civilization, they sought desperately for a way to keep their wisdom safe for posterity. At last they thought of the perfect idea—a book which was not a book, which would preserve their knowledge in symbolic form, safe from prying eyes, until it could be rediscovered and made available to a long-suffering world. This book, of course, is the Tarot pack of cards!'

Such, at least, was the story that gained ground in the 18th century. Antoine Court de Gebelin and Alliette (Etteilla) proposed that the Tarot contained the secret wisdom of ancient Egypt, coded in the form of symbolic pictures; later thinkers would suggest India, Tibet, or even Atlantis as the primordial source.

In the 19th century Alphonse Louis Constant (Eliphas Levi) suggested a connection with the Jewish Qabalah, while Gerard Encausse (Papus) proclaimed the Bohemians (Gypsies) as the bearers of this knowledge to the European world. (At that time the Gypsies—that is, literally, 'Egyptians!'—were thought to hail from India, via Egypt, and of course they often used cards, both Tarot and conventional, for divination.)

The Tarot Trumps' imagery resembles the doctrines of the Eastern and Hellenistic Mystics, of the Gnostics, Manicheans, and Cathars. More recent resemblances include Jungian theories of the Psyche and its development. Certainly the cards have a strange and often compelling beauty in their design, and have inspired many complex interpretations;

So what is the cards' real attraction? To foretell the future, or at least to understand the present? But different packs often use widely different symbolism, widely discrepant modes of operation ('spreads' or 'layouts') and conflicting interpretations of individual cards and groups. One way out of this is the Jungian approach; here the cards are seen as a sort of Rorschach test, allowing for projection of Unconscious material, which might include subliminal perception and subconscious problem-solving—perhaps even ESP. More familiar means of obtaining information include cold reading, fishing, and the prestige effect (if you tell people things in a mysterious way, they often believe you!), which also leads on to self-generating predictions.

The evidence for ESP is slight and highly controversial; also, in spite of believers' claims, I know of no properly conducted trials of Tarot cards that have really stood up to examination. In practice, believers simply use the cards, and seem quite happy with the (often contradictory) results.

Concerning the question of conventional methods of gathering information, I have known professional and quite sincere Tarot readerss who have told me, with no thought of criminal deception, that, when they are in a hurry, a reading can be expedited by noticing their client's age, clothing, presence or absence of a wedding ring, and so on—and they have seen nothing wrong or 'unoccult' in any of this!

Ultimately, the cards appeal to the artistic side of our natures; they call on our imagination, the 'wholistic' aspect of our minds. Yes, I know these terms are perhaps ill-defined, but they do refer to something which is often overlooked by professional sceptics; the human mind has its romantic, artistic, intuitive, creative, and indeed mystical side, and the Tarot cards (amongst many other weird and wonderful 'occult' paraphernalia) appeal to and perhaps help to develop this area of the mind. Whether mystic understanding and enlightenment can really be obtained in this way, I do not claim to know; but let me tell you a cautionary tale, before you rush off to purchase a pack of your own.

A friend of mine, a young lady whom I shall call Amanda, with a life-long interest in matters occult, was one day frequenting a Psychic Fayre. Business was slack, and one of the Psychics present offered to do a free introductory reading for her, no doubt on loss-leader principles, which went as follows:

Psychic: 'Well, my dear, the cards tell me that you are young, single, sexy, extremely attractive to men, intelligent, talented, ambitious, certain to go far in your chosen career, highly psychic, and have a deep and abiding interest in the occult!'

Amanda: 'Oh, that's nothing—anybody could have told you that! You could have seen all that, just by looking at my aura!' *Walks off, huffily, totally unimpressed—Collapse of Stout Psychic!*

May the Farce be with you!

Mike Rutter is a lecturer in Extra-Mural Studies at the University of Manchester.

Psychic Diary

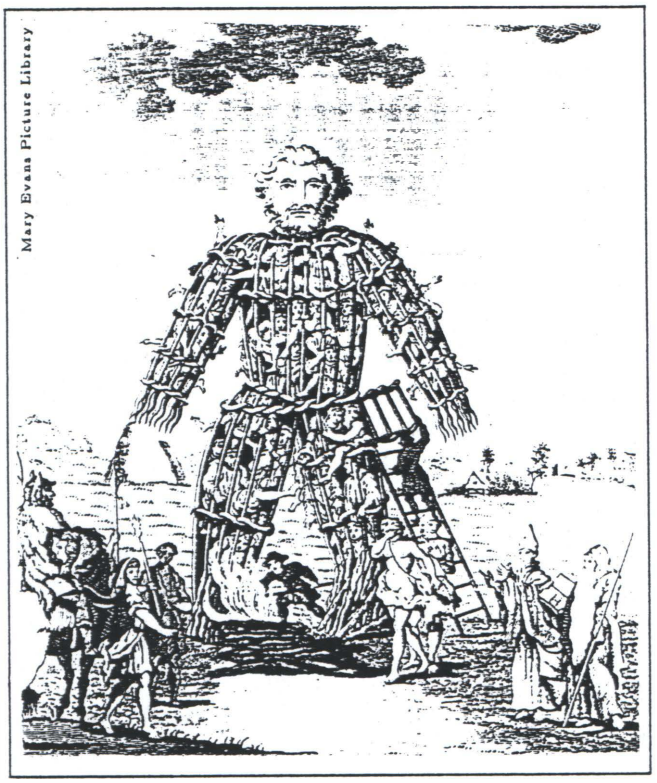
Toby Howard

'If you're so skeptical . . . ' a colleague said to me the other day. I wondered what I'd said, what sort of hole I'd dug for myself, what incriminating evidence I was about to face. 'If you're so skeptical, why do you believe in all that folklore rubbish? People dancing round maypoles, wearing antlers, dressing wells with flowers and bearing rushes? What's it supposed to achieve? Good luck? Prosperity? A fruitful harvest?' In this day and age, it's ridiculous. Why don't you and your lot tell them it's all rubbish?'

'Me and my lot'? I felt like a hit-man in some sort of skeptical Mafia. But did she have a point? In one sense, I think she did. For instance, I cannot honestly believe that the locals in the Helston Furry Dance in Cornwall are *really* driving out the darkness of Winter and welcoming in the luck of Summer. Nor can I believe that the bizarre South Queensferry Burryman—covered from head to toe with sticky thistle burrs—keeps the town in good fortune as long as his annual Parade is observed. And I cannot believe that whoever draws the Cream of the Well—the first water—on New Year's morning will be certain of good luck in the coming year. Having said this, why, last New Year, was I the First Foot—the dark-haired man standing in the cold outside the front door at a minute to midnight, with a penny in my pocket, a lump of coal in one hand and a piece of bread in the other? If I don't believe and if, as I suspect, many others who take part in customs don't believe, why do we all do it?

The answer, of course, is that there is far more to ritual than a claimed supernatural result. Rituals in themselves cannot affect the material universe, but they can have great importance and meaning for individuals, and for society. So can we believe and *not* believe, at the same time? Bergen Evans, in his classic book *The Natural History of Nonsense* says that 'we function on a dozen different levels of intelligence'. He is surely correct, but—call me a traitor if you will—I find his relentless cut-and-dried exposure of human error and stupidity wearisome. Naturally I don't think that birds choose their mates on St Valentine's day, but it's such a lovely idea . . .

To return to my colleague's good-natured goading. Coincidentally, the previous evening I had watched *The Wicker Man*, an obscure (but now cult) film from the early seventies. In it, Neil Howie (Edward Woodward) is a devoutly religious presbyterian police sergeant and lay preacher who has been called to a remote Scottish island—Summerisle—to investigate the disappearance of a young local girl. In fact, there is no missing girl; Sergeant Howie has been chosen for his special qualities and lured to Summerisle



for a quite different reason. The island's fruit and crops have failed, and one more failure would mean disaster for the island. According to the tradition of the island, a sort of folky druidic mish-mash served up by Lord Summerisle—Christopher Lee at his full height—there is only one solution: to appease the Goddess of the Sun and the Orchards with the dreadful sacrifice of a true Christian believer. Sergeant Howie is imprisoned in a huge wickerwork pyre in the shape of man, and burns to a martyr's death. It's a good yarn, with the subtle twist that you're never quite sure whether Lord Summerisle really *believes* in what he's doing. Is the 'religion', with all its traditional elements of hobby-horse, fool and teaser, a religion at all? Is it genuine folk-memory, of the kind—albeit free of sacrifice—that survives to this day around the country? Or is it all a cynical manipulation by Lord Summerisle?

In the next few columns I'd like to look specifically at some British and Irish folk ideas, and more generally try to examine the question of why we sometimes accept and do things which—if we try to intellectualise—appear hard to justify. However you care to explain it, the fact is that ordinary people do get up to *extraordinary* things.

Toby Howard is a lecturer in computer graphics, and co-editor of the *British & Irish Skeptic*.

Skeptic at large...

Wendy M. Grossman

Mensa hit the news in August when they launched a search for Britain's 1000 brightest children in the *Sunday Times*. Later, they admitted this was a 'stunt' to attract media attention. They may have gotten more than they wanted: on 14 August the *Independent* reported that educational psychologists said the tests Mensa was administering were 'culturally biased towards white, middle-class children' and pointed out that 'the test assumes that intelligence is based on the ability to read, write, spell, and do arithmetic. Einstein and Leonardo da Vinci, two of the greatest brains to ever have lived, both suffered from dyslexia.'

This is neither the first time Mensa has searched for so-called 'gifted' children, nor the first time IQ tests have been criticized. And yet, we continue to believe, paranoiacally, in IQ test scores, and a society based on them continues to exist. This is not sour grapes on my part: I was trawled in just such a child-testing exercise when I was 14. (This is, by the way, a matter of deep embarrassment on my part, so I do hope you won't tell anyone ...) Same routine: Mensa supplied a test to be taken at home, supervised by parents. Those who passed went on to some sort of central testing place where the tests were supervised by Mensa's flunkies. It's hard to see why people think testing at home encourages cheating. Since you have to take a supervised test afterwards, where would cheating get you? Certainly in my parents' house these things were taken very seriously, and no trickery went on. I found the test ridiculously easy, and was sent on for the supervised tests.

I remember my mother posted my final score and my letter of acceptance from Mensa on the refrigerator, proudly. I was enrolled, and I began getting Mensa newsletters. I think I went to one meeting. It was all adults: Mensa had no idea what to do with the 14-year-olds they had recruited. When I was 17, a new friend said rather forcibly that the *idea* of Mensa was snobbish and, worse at that time, 'straight'. I resigned over my father's protests: 'I like reading the newsletters!' I told him he should join himself. I guess he thought he wouldn't qualify even though he always used to say, 'you got it from *somewhere*, you know.'

People talk in the British press about the damage that being labelled 'not clever' could cause. I had the opposite problem: I was an 'underachiever'. I could think quickly and score well on standardized tests, so why wasn't I an 'A' student? My IQ test scores pursued me like an animated yardstick in a cartoon. Of course, the school would never tell me what they were. I'm not sure why, but I gather asking what your own IQ score is, is about like asking someone else what their age or income is. I guess they figure, if you know, you might tell someone. Such is the power of the IQ score.

Mensa should acquire two books for its library: Stephen Jay Gould's *The Mismeasure of Man* and David Owen's *None of the Above: Behind the Myth of Scholastic Aptitude*. Both are classics of critical thinking about the science of intelligence. Both call into question some of the basic assumptions we make about intelligence, aptitude, and education.

Gould's book traces the history of science's attempts to measure intelligence, from measuring skulls, to weighing brains, to test scores. Over and over, white, middle-class male scientists found that white, middle-class male brains were biggest, strongest, quickest. And regularly, a little while later, along came someone else who proved that their work was faulty, biased, and sometimes even fraudulent. Into the fray came Binet, the grandfather of IQ testing. His assignment was to devise a test *which would identify children with learning disabilities so they could be helped.* That was all. He specifically said, according to Gould: 'The scale, properly speaking, does not permit the measure of intelligence, because intellectual qualities are not superposable, and therefore cannot be measured as linear surfaces are measured.' (Gould, p. 151). Binet foresaw the potential difficulties for children if his system were used to rank them, as it is now. He worried about self-fulfilling prophecies: 'It is really too easy to discover signs of backwardness in an individual when one is forewarned.' Binet refused to label the results of his tests as inborn intelligence. His successors in America, however, seized on mass intelligence testing as a way of life, and abused the results in exactly the ways Binet had foreseen. And a few he had not: the results of the first mass intelligence tests, conducted by the US Army in World War I, were used as evidence in favor of limiting immigration in 1924 Congressional debates.

David Owen's book concentrates on a later outgrowth: the SAT's. These 'Scholastic Aptitude Tests' are taken by all American teenagers who want to go to college. The idea behind them *sounds* all right: America is huge, State curricula differ, and colleges need some way of comparing the many applicants from different areas and different schools. So far, so good. Owen, however, shows—often hilariously—that what the SAT's *really* test is your ability to think like the people who designed the test. He explains how the questions work, how to identify the correct answers without doing the arithmetic, and even gives a short course in how to answer questions about the content of the provided paragraphs without actually reading them. The SAT's are administered by the

Educational Testing Service in Princeton, NJ. Most students assume a connection with Princeton University; there is none. The ETS is an independent, secretive organization which has parlayed tests into a fortune (tax-free) and which administers more tests every year. ETS now supplies tests for licensing teachers, hairdressers, golfers, among many others, and for admitting graduate students, law students, and medical students. It's quite an empire. ETS reacts about like the British government when challenged: they claim superior knowledge, refuse to give information, and lose inquiries in red tape. They also accuse critics of wanting to destroy the fabric of society. A bit excessive, perhaps. But fortunately, America has a legal system which allows challenges even to its major institutions. Recently, a court ruled that New York State's use of SAT scores to award state scholarships discriminates against girls. This was the first time a court has ever confirmed the SAT's sex bias. Result: New York State is designing a new test. Oh, well ...

The criticisms these books raise are biting, legitimate, and undoubtedly right on the money. And yet... it's very hard to shake the nervous feeling that there must be something in it: it's so accepted. What would I rather believe? That I think exactly like the unoriginal, conservative, middle-class white men who design the tests? Or that I really am smarter than 99% of the rest of the population? When I was a kid, I had a button which was an advertising gimmick for General Electric: 'Be nice to me, I'm going to be a GEnius someday.' I guess I'm still working on it.

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

Head hunting?

Mike Howgate

The claim to be 'holistic' is the *sine qua non* of just about every New Age diagnostic procedure and treatment. Treating the whole organism rather than the symptom is the professed aim of the New Age medic, but is the treatment based on 'holistic' diagnostics? I'm sure it isn't. Your typical New Age diagnostician attempts to divine the state of health of an entire organism from the soles of the feet, the palms of the hands, the feel of the spine or the markings of the iris. To my mind this smacks of the type of specialisation and gross reductionism which the New Agers attribute to modern science.

All you have to do to get a feel of the specialisation inherent in New Age medicine is to attend one of their boring fairs. Iridologists, chiropractors, reflexologists *et al* ply their wares at their different booths, without even a cursory second opinion from a rival practitioner. Surely we should encourage 'comparative quackology'. Does the iris or the big toe give a more accurate diagnosis of piles? Or should we look for a more truly 'holistic' system of diagnosis?

I think that it is time 'physiognomy' made a return. The face exhibits so many nuances of expression and so readily responds to stimuli, that here if anywhere lie clues to the emotional, psychological and physical state of the organism. Physiognomy also has the advantage that it can be practised on the tube, bus or train and needs no specialist equipment.

The only problem is the scarcity of classic works on the subject. *De linearum, nevorumque prognostico faciei humanae contingentium* by Casper Maginus and published in the mid-seventeenth century

contains hundreds of classic faces. Literally dozens of 'bad moral characters' besides the familiar frowning, loose-mouthed individuals with close-set eyes. This 'visage analysis' could soon displace graphology in the interview procedures for responsible jobs, and could also prove useful to the insurance business. For not only is the character laid bare in the face of the prospective insuree, but also the fortunes and misfortunes of their future lives. *De linearum* does not lack for boldness of its predictions—no palmists' waffle here. One face foretells that its owner was 'doomed to die in the galleys at the age of 39'; another would catch syphilis, and several have misfortune in marriage written across their faces. A doleful/whimsical look combined with severe arching of the right eyebrow prefigures the loss of a testicle (see illustration). Any of these mishaps could be written into exclusion clauses after the obligatory analysis of a passport photo. This service should be worth millions to the insurance companies, and for only a small percentage ...

Mike Howgate is convenor of the London Student Skeptics.

Heaven and Earth

Michael Hutchinson

For most of my life I looked on doctors with some awe. Doctors were special people. That's why we called them 'Doctor' and not 'Mister', wasn't it? And they knew all about life, the universe and everything. Didn't they? I don't know exactly when my respect for doctors—especially medical doctors—began to wane; soon after I learned to be a skeptic I suspect. Hearing of doctors who practice or believe in alternative medicine has led me to a theory about most general practitioners: as their training does not teach scientific experimentation they are no better than computers. A well programmed computer could—and one day will—ask all of the questions your doctor asks, and arrive at the same (or better) diagnosis. A general practitioner only has to respond like a computer. As long as he has been programmed properly and has sufficient memory he will come up with the same answer time after time. As the person who becomes a general practitioner is not required to think logically he is left open to holistic propaganda. This doesn't mean that he is a worse GP. By no means. I wouldn't want to change my own doctor for a moment. He is an excellent GP in whom I still have a lot of faith. But—he believes in alternative medicine 'because the patients get better'.

'What is all this leading to?', I hear you ask. Well, I am reminded of the awe in which I once held doctors when I hear new skeptical groups say 'We must get a magician'. It's as though a magician is going to be their fail-safe system. Is a magician essential? Unless he or she is competent in this particular field, I don't believe so. A magician might be able to give advice after watching an informal psychic demonstration, although—as I have said before—there are few instances of psychics doing magic tricks. But be careful of over-rating your magician when it comes to an official test. Otherwise, a disaster could occur.

Just as there are 'doctors' and 'doctors who can think', so there are 'magicians' and 'magicians who can help in psychic investigations'. But having said that, I believe that most intelligent, thinking people should be able to 'control' against psychics doing magic for I cannot recall any trick which can be repeated under properly controlled conditions. This is why one of the rules of magic is 'Don't tell the audience what you are about to do'. Another is 'Don't repeat a trick' (they know what's coming). Consequently, if a spectator (or experimenter) has any intelligence and knows what the effect is, he should be able to 'control' against cheating, especially in repeated tests. If the magician or psychic is using his own faked equipment it is an entirely different matter of course. For a test in which a dowser had to say whether an electric current was on or off James Randi did allow him to use electronic equipment made by an associate (*Skeptical Inquirer*, Vol.8 No.4). To do so was taking an enormous chance, although I am sure that Randi would have insisted on keeping the equipment for examination if the result had been positive. But Randi is an experimenter of incomparable experience. He has more than enough knowledge of magic, and just as important he knows an enormous amount about science. (If he hadn't chosen to be a magician he would most likely have become a scientist.) In these respects he is probably unique and should not be compared with any other magician, nor indeed with any other psychic investigator.

There are a number of cases in which 'magicians' have supported psychics and mediums and their testimony has falsely been given more credence because they are magicians. One such case involved 'tests' of Uri Geller conducted by Artur Zorka and another magician in Atlanta, Georgia, whose pretentious report was reprinted in *The Geller Papers* (ed. Charles Panati, Houghton Mifflin, 1976.) Zorka's paper was entitled 'Official Report: Society of American Magicians, Assembly 30, Atlanta Chapter, by The Occult Investigations Committee', and took up all of two pages in *The Geller Papers*. The 'tests' were not pre-arranged but took place in an office just minutes after the magicians met Geller following a television show which they had watched from the audience. A final 'test' was even conducted on a pavement. Zorka stresses in his report that 'the type of control put on by a magician is different from that of any other investigator. It is a control designed specifically, by those who are trained for a profession in the art of deception, to prevent fraud.' That's fine in theory, but not good enough when other factors negate these 'controls', as we shall see.

The report is very favourable to Geller, telling how the nylon-reinforced handle of a fork 'literally exploded' in his hand; how he 'made remarkably accurate facsimiles' of drawings made by 'the committee'; how he duplicated designs 'merely *thought* of' (Zorka's emphasis); and how 'from a distance of no more than five feet' Zorka saw a key bend 'beneath Geller's touch'. Zorka's report is as interesting for what it doesn't say, especially as some off the details he left out are included in a letter he wrote to Milbourne Christopher which is also in *The Geller Papers*. The letter takes up two and a third pages more than the report. Zorka told Christopher that before he met Geller he had tested a similar fork to the one which 'exploded' in Geller's hand by trying to bend it in a vice because he couldn't bend it by hand. The handle had cracked. (No surprise there.) The difference between the Geller fork and Zorka's was that

the metal rod around which the handle had been fitted to the Geller fork was bent. Zorka was wrong in choosing a fork which had a handle made of a different material. He should have used a one-piece fork. Questions: Did Geller break the handle when trying to bend the fork by force? Did he then physically bend the rod during any distraction caused when the handle had shattered? How did Zorka 'control' for this possibility? When did Zorka notice the rod was bent?

In the telepathy tests I am quite happy to accept that Zorka and his associate didn't let Geller see what they drew. That scenario isn't necessary given the way that Geller sometimes seems to work. The report simply said: 'After a few false starts, Geller was able to make remarkably accurate facsimiles of the target drawings. The target drawings were made on plain sheets of white paper, and when the drawings were finished they were covered.' In the Christopher letter, Zorka says that three attempts at telepathy—in which Geller tried to reproduce drawings—failed. So Geller told Zorka not to write anything, but to think of some object. Zorka thought of one of his dogs. Geller made a drawing, became unsure, discarded the paper and said he wasn't getting anything definite. He then suggested going back to the original method of drawing the target. (Note how Geller was running the experiment.)

It is interesting that it is from the letter, and not the report, where we learn the details of a successful experiment during which Geller first asked Zorka to imagine the object was drawn on a piece of paper, and then, not having been successful, imagine the object was on a TV screen which Geller had drawn on a pad. When I have seen Geller doing this sort of thing he has sometimes asked the person thinking of the drawing to close their eyes and imagine they are drawing it on a large screen. While doing this the person often makes small movements of the head from which Geller might be able to pick up a few lines or even a complete simple drawing, not necessarily to scale. (Some of the Zorka results were not to scale.) Zorka can be excused for not taking this method of picking up clues into consideration. It isn't a standard method, and to my knowledge hasn't even been demonstrated as workable. I merely report an observation and a hypothesis.

Let's now return to the experiment in which Zorka thought of his dog. Towards the end of his letter to Christopher he explains that when 'straightening up the office before we left, I picked up the paper Geller had discarded on one of the first tests. The one where I had not drawn a 'target'. On it was a rough drawing of what looked like a dog'. Now, if this was the drawing which Geller had made during that experiment, why did Zorka report Geller as saying (and I quote from the report) 'he wasn't getting anything definite'? What's more definite than a dog? I suggest the possibility that the dog was drawn secretly by Geller after that particular experiment in the hope that it would be found by Zorka later. It's not a bad bet that someone might think of a dog (or tree, or house, etc) at some time during so many experiments; and if someone is silly enough to make a match after the event Geller is given credit for another hit. Zorka certainly has no right to include this as a successful experiment, and even mentioning it in support of Geller shows his naïveté as an experimenter.

The final 'controlled' experiment took place on the pavement outside of a hotel where Zorka was to meet his father. As mentioned, the report says that Zorka witnessed the event 'from a distance of no more than five feet'. Well, Zorka must have extremely long arms, for in the Christopher letter he later wrote 'I asked him to try, one more time, to bend a key for me. I gave him a very short key which I chose because its length might make it difficult to get a good grip on. He didn't even take it from me. He told me to hold it between my thumb and forefinger. As I did, he stroked it with his finger and it started to bend. I placed the key into my palm and watched as it continued to bend. I cannot explain it.'

With additional contradictory statements like 'I gave him a very short key...' immediately followed by 'He didn't even take it...' I think that Zorka's inability to describe events as they really happened is quite apparent. I must, however, add something about the key 'bending' in Zorka's palm. Zorka was, by his own admittance, unable to explain in conjuring terms anything which Geller had done up to that point. He was therefore open to any excited suggestion which Geller might have made that the key 'was still bending'. It's something which I recall Geller doing since then. And some people will believe they see the key continuing to bend, just as a radio presenter did during one of Randi's performances in Bristol.

Zorka's letter to Christopher has added invaluable information about the poor quality of the experiments which just isn't apparent from the report. There may well be many more things which occurred on that occasion and which Zorka either didn't notice, or doesn't mention because he thought them irrelevant. He apparently doesn't realise the importance of some of the damning things which he did reveal.

This is a classic case where the knowledge of two performing magicians was just not sufficient. They let Geller run the experiments and were not only fooled by him, they fooled themselves. They were also quite happy to issue an Official Report which grossly exaggerates the events. There is much to be learned from this. The next time a skeptic suggests the importance of a magician, recall this story and remind him that magicians only pretend to perform miracles.

Michael Hutchinson is a member of the U.K. Skeptics and British distributor for Prometheus Books.

Reviews

The Burt affair

Robert B. Joynson, *The Burt Affair*, Routledge, 1989, 347 pages, index, £25.

The question of scientific fraud is of great importance for all those who are concerned with the status of science and the nature of pseudoscience. Fraud infests pseudosciences—it has almost become a sort of tradition in some of them. One reason, as Antony Flew has suggested, why parapsychology finds it so hard to get a fair hearing in scientific circles, no matter how upright its proponents may appear, is that there have been so many frauds in the past. The best policy is to adopt a thoroughgoing skepticism. But if Science is to set itself up as arbiter of objective truth, it must itself be beyond reproach. Fraud, fudge, and finagling should have no place in scientific practice. But the world is not perfect, and human beings are susceptible to the flattery of fame and the urge to succeed.

In recent years, few allegations of scientific fraud have been more explosive than those brought against Professor Sir Cyril Burt, the doyen of British psychologists. When he died, in 1971, he was regarded as a major contributor to his field (which had been in its infancy when he was an undergraduate at Oxford, and which he had done much to bring to maturity) and his position in its history seemed secure.

In just five years, the first allegation of fraud was levelled, and in 1979, the British Psychological Society convened a posthumous court martial. Its verdict was harsh: Burt was damned to perdition as a liar. Not only were his results suspect, he had invented research assistants who did not exist. Very probably, some thought, all his findings were complete fabrications, not just the controversial ones.

And Burt's work was bound to be controversial, since it concentrated on matters concerning the influence of heredity and environment on that most precious of human qualities—intelligence. It won him few friends in certain quarters.

Burt gathered information on the I.Q. of identical twins who had been separated from one another early in their lives. In this way, he was able, or so he claimed, to specify just how much their intelligence owed to the hereditary component, and how much to environmental influences.

A moment's thought will suggest that separated identical twins are an uncommon commodity; where did Burt find them all? The answer that has now become standard is that he didn't, or that if he did, then having gone to all the trouble of seeking them out, he just invented the data.

Every psychology student has read Leon J. Kamin's *The Science and Politics of I.Q.*, which is an expose of Burt's scientific shortcomings. It contains the verdict which sticks in my mind like an arrow: 'The numbers left behind by Professor Burt are simply not worthy of our current scientific attention' (p. 47 of the 1974 Erlbaum edition). The case was, it seems, settled in 1979 with the appearance of Professor Leslie Hearnshaw's authorized biography of Burt. Hearnshaw, was, reluctantly, compelled to agree that Burt was guilty of deception, and offered a character study of a man who had a dual personality, the Jekyll and Hyde of psychology.

But was he? Dr Joynson, of the University of Nottingham, has looked into the matter with fresh eyes. And what he sees makes interesting, and very controversial reading. Joynson presents a case for the defence of Burt, claiming that the evidence against him is not nearly so clear-cut as everyone had been willing to suppose. Joynson has exhaustively re-examined the charges made, and is able to show that many of them are susceptible to an alternative reading.

Some of the charges are actually the result of carelessness or misinterpretation on the part of the critics, and Joynson disposes of these effectively. In one or two instances, he is on much less sure ground, and his conjectures as to 'what might have happened' become rather ingenious. In one place, I was reminded of those earnest Sherlockian scholars who account for discrepancies in the dates of the great man's cases by postulating that Dr Watson must have hastily scribbled down a date in his notebook, which he later misread as something completely different when writing up his final version.

The one aspect of the Burt affair that continues to intrigue is the absence of the two ladies who were supposed to be his research assistants. Joynson has nothing very new to add to this, unfortunately, but he does make it clear just how horrendous the problems are in trying to track them down. They probably worked for the London County Council, but only in a voluntary capacity, and the archival records for the relevant period are incomplete. Joynson has, I think, done everything that he could to try to find them, and the mystery may remain unsolved.

This book does have passages which are moderately technical; the reader will need an acquaintance with statistical methods to follow some parts, and of course technical terminology is used freely. But it is an enjoyable, sometimes exciting read, enlivened in places by a dry humour.

So am I convinced? Is Burt now rehabilitated? I am less certain about this. The case against him has been shown to be not nearly so convincing as we all liked to think. When the bandwagon started to roll, people were only too willing to jump aboard ('Of course,' you could almost hear them saying, 'I never liked him much anyway'). A little more circumspection would have been in order, and so we should not leap onto the next bandwagon that comes rolling along, especially if it rolls in the opposite direction. I will say that whatever the truth of the matter, Burt was denounced in a particularly strident way—there is a nastiness in some of the attacks that reminds me of a vendetta. Joynson has shown that Burt at least deserved fairer treatment, and that many of the accusations against him will not stand up, but in his desire to acquit Burt of the charges made against him, I think he allows himself to overlook some his less pleasant qualities.

I am sure that Burt ran his Department, at University College, London, in a high-handed and autocratic way, but there is nothing unusual in that: in those days, it would have been considered normal (I have even heard it said that the practice is not uncommon today).

And I am also of the view that he ran 'his' journal (*The British Journal of Statistical Psychology*) as a sort of personal fiefdom, feeling free to meddle with people's contributions when it suited his purposes, and to publish his own work under pseudonyms. He was, in short, a bit of a scoundrel; but a bare-faced liar? No, on balance, I think probably not.

—John A. Lord

'Margery' revisited

The Witch of Beacon Hill, by Paul M. Levitt. Saturday Night Theatre, Radio 4, 30 September 1989.

The Witch of Beacon Hill purports to relate the events surrounding the investigation by the magazine *Scientific American* of the well known medium Mina Crandon, better known as 'Margery', in 1924. The best known member of the examining committee was Harry Houdini, and the play concentrates on the clash between him and Mina and her husband LeRoi, a noted Boston surgeon.

This was presumably done for dramatic emphasis, but as a result a misleading impression was conveyed. It was suggested at the end of the play that Mina won the battle with Houdini (though clearly by fraudulent means), and thereby achieved universal acceptance as being genuine. This was far from true: the phenomena she produced continued to be debated hotly. Rival interpretations were never reconciled, but merely faded away due to the new emphasis on laboratory experimentation in the 1930s, and the death of the protagonists (LeRoi in 1939 and Mina, by then an alcoholic, in 1941).

By concentrating on Houdini to the almost total exclusion of the role played by his colleagues, the listener is left with the impression that they did not play a significant part. This was not true. Also, no indication was given that the *Scientific American* investigation was one of a series carried out on Margery. Her fate in the play seemed to hang on Houdini's assessment, whereas in reality verdicts of fraud, including Houdini's, though numerous were always circumstantial. Whatever the outcome, she always bounced back. Because this was not a documentary, it was difficult to know where attested facts stopped and the author's imagination began. For example, although rumours about Mina's sexual conduct circulated at the time, and her affair with Bird (*Scientific American's* associate editor who was responsible for persuading the magazine's proprietor to put up the prize for which Margery was tested) seemed plausible, it was harder to believe that she attempted to seduce Houdini. It was a pity that because of the concentration on Houdini and his particular motives for taking a keen interest in life after death, the furore over the famous thumbprints was totally ignored, occurring as it did from 1926 onwards. This scandal makes amusing reading, effectively killing scientific interest in Margery. The prints were supposed to belong to Margery's control 'Walter', but were attributed to Mina's dentist by her detractors in the Boston SPR, provoking claim and counterclaim which said more about the state of American psychical research than the merits of the Margery mediumship.

What were the results of the Margery episode? Basically there were two. Firstly, it hardened, although it did not cause, the rift in the American SPR which led to the formation of the Boston splinter group. Secondly and more importantly, J.B. and Louisa Rhine had attended some of Margery's séances, and were so concerned at the damage that was being caused to psychical research by the resulting internecine warfare that they decided to retreat into the laboratory, where results would be more clear cut. As it happened, interpretation there was just as difficult as it had been in the seance room, but at the time it must have seemed the only reasonable approach.

Alas the play failed to capture the pivotal nature of the Margery episode, although a flavour of the acrimony between the participants did emerge. It made a good radio drama, and any verdict on the play's value must hinge on one's attitude towards verisimilitude in fiction. The moral ambivalence of the Crandons was convincingly portrayed, so that it can be understood sixty years later why such passionate feelings were aroused by the case. It was a pity that the requirements of a good play and the demands of historiography did not coincide.

—Tom Ruffles

Letters

Skeptical Surprise

Although not a paying reader of *British & Irish Skeptic* (a friend lets me read her copy) I hope you don't mind if I put in a pennyworth. While reading the latest edition I thought it would be a shame if the quality of your contributors' work (with some exceptions) went unpraised. I especially thought this after looking at 'Sprite', your anonymous cartoonist (or cartoonists?) for this strip is, one would think, quite limited in scope compared with the enormous amount of material which other contributors can draw upon, and yet, 'Sprite' is always so clever, and succinct in its message. Well done sir, or madam! Well done generally, but ...

Having got the praise of my chest, I would also have been urged to write in view of your reply to Vivien Gibson. Of course you were right in not trying to 'explain' her anecdotes in rational ways. It would be difficult, and perhaps impossible to find the 'secret' (if there is one) behind these marvels even in a long conversation with Mrs Gibson. It would be the same if you tried to analyse many conjuring tricks, in which it is what you are 'not' told that is important. Mrs Gibson should just be prepared to accept that she 'might' have been fooled or that coincidences were at work, or that there was a combination of the two, plus additional factors of which we non-specialists are not aware. What surprised and concerned me most is that as 'a publication dedicated to the *scientific* (my emphasis) examination of claims of the paranormal' you are now encouraging your readers to carry out 'personal investigations' for which few will be qualified. You will probably end up with a clone of *Psychic News* or the Society for Psychical Research's 'Newsletter' which also encourages anecdotal evidence. Perhaps I should subscribe to *Astrology Magazine* and lament the passing of the B&IS.

Yours constructively

Michael Camfield
London

Psychic Tea Room

I must comment on Hocus Pocus' review (B&IS, III.3). *The Psychic Tea Room* was in my opinion good viewing, because we got to see the psychic's world as it really is, warts and all. Every viewer I've spoken to said how ludicrous they thought it all was, not how they had been converted to New Age nonsense by it. We surely have to give credit to T.V. viewers sometimes for having common sense, instead of continually airing our concern for their apparent lack of it. What is wrong with a programme demonstrating the tame level of public belief in the paranormal anyway? You surely cannot fight apparent irrationality by censoring it. If anything is needed to fight the paranormal it is scientific scepticism, not censorship. This programme, however, was so laughable it didn't need a patronising narrator or guest experts to tell is it was nonsense. Besides, it included an interview with a woman who'd been 'strung along' by a 'psychic' through a personal crisis (divorce) at considerable cost. The woman knew she'd been 'had' and she told us all about it.

It strikes me that, before they view or read anything with 'psychic' in the title, some sceptics have their knives out and feel obliged to use them. Thus we get this programme described as 'puerile non-entertainment' and 'not something to be publicised and pushed'. As a reasonably informed sceptic I was disturbed, but not surprised, by the programme's content, especially those individuals who seemed to be emotionally disturbed. However, I would stop way short of criticising the programme's producer for making it. I took it for granted that the producer was occasionally poking fun at the paranormal and thereby being critical. Why else were we shown Zsa Zsa Gabor enthusing about her psychic talents and those of another woman whom she did not even realise was stood next to her?

Let's see the good in programmes like *The Psychic Tea Room* instead of mis-perceiving negative influences we think they might have because of our keenness to be sceptical.

Richard P. Ward
London

Miscellany

My abject apologies to B&IS readers. In a letter about crop circles (B&IS II.6), I once described Colin Andrews as being level headed and not subscribing to paranormal explanations. I was wrong. A recent news report on crop circles featured an 'expert' who was investigating them using dowsing rods and linking them to ley-lines and Stonehenge. That person was Colin Andrews.

To answer John Brunner (Letters, III.3): I do not claim anything about Guam disease; never having studied it personally (non omnia possumus omnes). I reported a presumably reliable source in *New Scientist*. I think that this again proves my point about not being able to believe anything; especially if it is in NS.

I am not sure whether Ernest Jackson's letter (III.3) was appreciative or critical. In any case, the important point is that one should not allow oneself to be spoon-fed with easy answers, and should always keep looking. One quibble. I read about the Halifax device in the *Police Gazette* some 20 years ago.

My understanding was that it was like a modern impact testing machine, rather than a guillotine, and removed the head in the same way that a hammer removes the glass from a light bulb.

Sue Blackmore asks (III.3, p. 15) why there should be moving stripes across the visual cortex. J.M.T Thompson and H.B. Stewart (*Non-Linear Dynamics and Chaos*, Wiley, 1986) mention (p. 54) that computer simulations of a simple neural network have revealed waves of 'firing', although the text does not make it clear whether these were temporal or spatial waves. Worth looking into?

I suggest that if Jennifer Bradshaw assiduously writes down the time on every occasion that she consults a clock, the effect will become much less mysterious.

David Fisher
Cardiff

Pyramyths

Two comments on Barry Williams' *Pyramids, pyramyths and pyramidiots* (B&IS III.3): First, Williams reasonably asks 'why build a pyramid in the first place?' (and states that no-one knows the answer). It seems obvious that the shape must have evolved naturally and one does not have to look far for a prototype. I.E.S. Edwards observed that in pre-dynastic times the dead were buried in rectangular or oval pits dug in the sand. He guessed that these were then covered by a heap of sand, supported at the sides by a wooden frame. I suggest that the pyramid was evolved from such a heap. If the wooden frame was square on plan then the sand heap would have developed four equal triangular sloping sides, albeit at an angle of only about 30° (dry sand) or 35° (moist sand). It is easy to see how there arose a need to stabilize the heaps and how this stabilization would have increased the angle of repose. Naturally these primitive pyramids have not survived. Second, Williams wonders how someone with such a foreign sounding name (Charles Piazzi Smyth) became Astronomer Royal for Scotland. Smyth was the son of the eminent amateur astronomer Admiral William Henry Smyth who named him after Guiseppe Piazzi, the Italian astronomer he admired. Although only 26 at the time, Smyth seems to have gained the post because of the support of John Herschel (sic).

Steuart Campbell
Edinburgh

Science and Skepticism

I didn't take many notes at Paul Kurtz's lecture at Conway Hall ('The Transcendental Temptation') because I expected to find a write-up in the *British & Irish Skeptic*. Though Nick Beard took the lecture as his starting point rather than giving a summary, he does seem to be responding to Kurtz's ideas. My brief notes record Kurtz as talking about 'religion and its substitute, the paranormal.' Why skepticism fails to convince; what can we do? how to stamp out magical thinking? why so few debunkers, so little dissent? skeptics feel isolated; will we be overwhelmed? not enough criticism; wacky theories postulated with inadequate evidence; after careful scrutiny belief will be destroyed; we must dramatise criticism to catch people's attention; use magicians (here he drew a parallel between Moses and Eusapia Palladino).

People suffer from a fear of death and a feeling that the universe is impersonal. Using their creative imaginations, they construct fantasy systems that serve functions. They need a kind of cosmic rooting. The problem is hydra-headed. Freethinkers need to make constant effort. All this is not enough. Atheism has failed. It was during the question and answer session that one of the audience talked of his experience of bliss, and the rest of the company laughed, annoying Nick Beard. But the man who talked of bliss was, I think, putting his experience forward as evidence for the transcendent, not merely saying that bliss was part of human experience, a statement I think all those present would have agreed with.

Both bliss and pain are part of human experience. Those who say that the experience of bliss proves the existence of the transcendent are not accepting it as part of being human. Why will they accept the pain, but not the bliss? It assumes a rather low-grade view of what it means to be human. Like nearly all religious attitudes, it denigrates human beings while pretending to exalt them.

To answer Nick Beard's later points: there are questions science can't address (aesthetics and shopping). This doesn't mean science doesn't do its job in its context. Perhaps it is false to oppose the religious and the scientific worldview and assume they are mirror-images of each other. The religious worldview proffers answers to many questions science doesn't address. (Why are we here? What is the meaning of life?) But without religion these are non-questions. (We're here because we're here because etc; meaning is something we have to give to our lives; our lives have meaning and significance to other people inasmuch as we influence their lives or they care what happens to us.)

Science is a method and a body of knowledge, not a world-view. Skepticism on its own is not a world-view, as Nick Beard points out. I agree with him that we have to stop doubting somewhere. Doubting that we can know anything leads to passivity and indeed to smugness. And it's so boring! Actually 'but we can't really know anything' is a defence I often meet when arguing with believers in astrology etc.

One of Paul Kurtz's best suggestions was the Conway Hall should be turned into a humanist leisure complex with swimming pool, cafe and cinema.

Lucy Fisher
London

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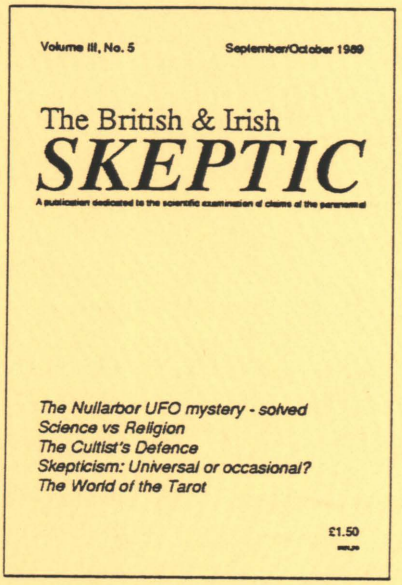

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