

Volume 15 Number 2
Summer 2002

The **Skeptic**

Waxy Ears? Listen Up...



An Instructive Tale
of Ear Candling

Also in this issue:

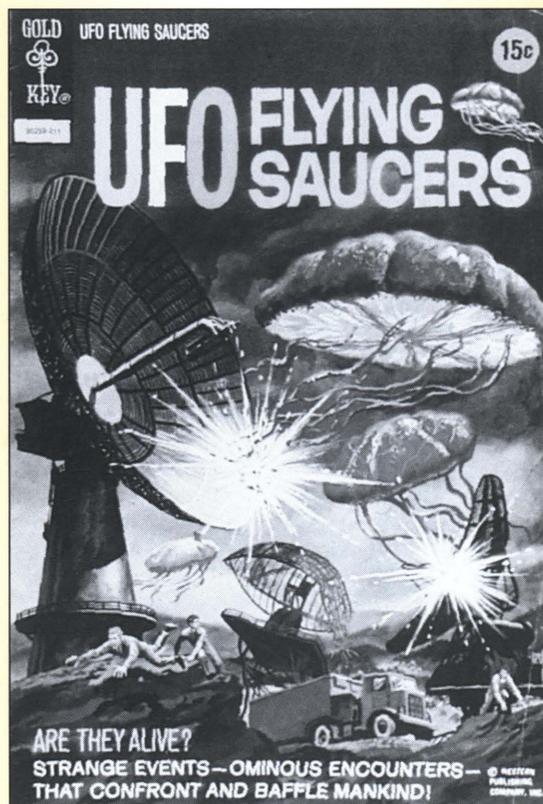
A Case of Spirits

Science and Non-Science

Do Astrologers Have to Believe in Astrology?

Plus: News. Book Reviews. Comment. Humour

Hilary Evans' Paranormal Picture Gallery



The suggestion that Earth's atmosphere may be inhabited by aerial life-forms is an attractive one, not only because it is exciting to think that the skies are not as empty as they seem, but also because it could explain some strange anomalies. Strange 'blobs' fall from the air into people's gardens and defy analysis: could these be decomposing sky-creatures? The frequently reported phenomenon of 'angel hair' has been analysed as coming from an animal/biological source, but if it is drifting down *from*? Infra-red photography frequently appears to reveal anomalous objects in the sky: and luminous spheres drifting down Norwegian valleys resist classification as ball lightning. But all these fall a long way short of the intelligent aggressive creatures depicted in this 1972 magazine cover.

Hilary Evans is co-proprietor of the Mary Evans Picture Library, 59 Tranquil Vale, London SE3 OBS.



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Editorial

Kate Holden and Chris French

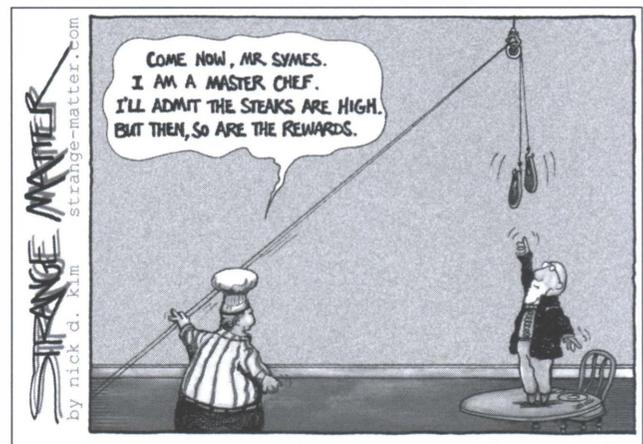


HELLO AND WELCOME to issue 15.2 of *The Skeptic*. In this issue we explore the mysterious art of ear-candling, take a look at spirit photography through the ages, examine the criteria for distinguishing science from non-science and ask whether astrologers have to actually believe in astrology. All this, plus of course the usual columns, book reviews and letters.

Following on from our general request for editorial help in the last issue we would like to thank those of you who came forward to offer your proof-reading services. Much appreciated! We would like to make another request in this issue. Specifically, we are keen to find somebody (or a group of people) who would be willing to take on board the role of marketing *The Skeptic*. This role would require a creative mind – someone who can think of lots of different ways to increase subscription levels and to aim towards making *The Skeptic* available in bookshops. There is no money involved, but it is anticipated that the job could be enormously satisfying. If anybody is

interested, then please contact us at edit@skeptic.org.uk, with 'marketing' as the header. Finally, as usual, we always welcome your contributions, or ideas for contributors.

With all best wishes, Kate and Chris



Classifieds

Documentary Film Crew seeks information regarding rumours of cat-eating plants, especially in the East Anglia area. Foreignfauna Film Productions, London.

Anti-gravity bobble hats.
£12 per dozen.

Lost:
medium sized ginger tom cat. Small reward. Norwich area.
Apply: Mrs Ethel McNab.

Build your own ufo landing area
with pine. Flat pack. Full instructions supplied. £125.99. Suit area the size of twelve futons. Also available: twelve futons. Please specify. The East End Surplus Bed Company.

Missing:
Agatha, award winning persian cat. Light grey. Curious by nature. Downham market area.
Apply: Ron Twigg.

Be seen! Carry a torch. £5.99 excl. batteries.

Have you seen Mitten?
Young tortoise shell kitten, inquisitive nature, last seen Great Yarmouth.
Apply: Timmy and Sally Johnson.

Educational

Courses for Extra-Terrestrials

Harpden Polytechnic is pleased to announce new courses for extra-terrestrials. At HP we appreciate how hard it is to come to terms with crashing your mother ship, and finding yourself marooned on a planet completely alien to your own. We offer three topics:

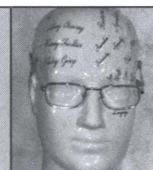
Table Manners – Dr. Ted Bunn specialises in napkin dexterity and the niceties of eating out, with particular emphasis on selecting the right piece of cutlery, choosing your wine, and placing the food in the correct orifice.

The Do's and Don'ts of First Dating – Helen Tongue will touch on topics of conversation, suggest appropriate venues, and stress the importance of not eating a sexual partner after intercourse.

The Reason and Necessity for Queuing – A two-week intensive course for those extra terrestrials stranded in the United Kingdom. Oliver Forbes-Bryceson will explain how and why queuing developed, and following the unfortunate incident on London transport recently, will stress why laser weapon technology is not a preferred solution to getting a seat.

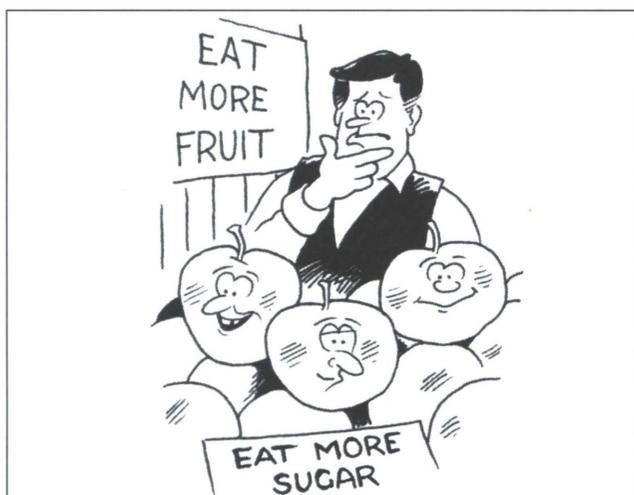
Fees payable in pounds sterling.
Apply: The Bursar.

Hits and Misses



Forget apples

It's like Woody Allen said in his 1977 movie, *Manhattan*: "Everything our parents said was good for us is bad. Milk, sun, red meat..." Now the *Sunday Times* claims we're supposed to add apples to the list. Apparently the problem is that newer varieties such as Pink Lady (we thought that was a cocktail), Fuji, and Braeburn are substantially sweeter than the more traditional ones, and the consequence is that with a 15 percent sugar content these apples are, at least in terms of sugar and its effect on your teeth, as bad for you as drinking cola or eating candy. Of course, there are lots of other reasons to eat fresh fruit, and it's dismaying to see those glossed over – fibre, vitamins, minerals – and to see researchers suggesting that kids would be better off drinking artificially sweetened drinks than fruit juice. Sugar isn't everything.



The other flaw in the article is that it compares newer apple breeds (up to 15 percent sugar) with older, more tart ones whose sugar content was last tested ten years ago such as Granny Smiths and Cox's Pippin (10 to 12 percent sugar) and whose taste doesn't seem to us to have changed much. According to recipe sources, one way to tell how much sugar an apple has in it is to cook it. The ones that collapse into mush have less sugar; the ones that retain their shape have more. They don't say, however, what the threshold is.

The problem of increased sugar content, we expect they'll notice eventually, is not going to be limited to apples. The agricultural industry, knowing that humans respond favourably to sweet tastes, has been for some time developing new breeds of everything from corn (the cob kind) to lettuce that are sweeter and therefore more appealing. So, the upshot is that just as nutritionists have been seriously pushing us all to eat more fresh fruit and

vegetables because it's good for us, the industry has managed to make it *less* good for us. Charming.

Bankrupt consciousness

Last issue Findhorn, this issue Hare Krishna. It seems that lawsuits accusing Hare Krishna boarding schools in the US of child abuse in the 1970s and 1980s have mounted to the point where about 12 of the organisation's 50 US temples are to file for bankruptcy protection under Chapter 11 – where it will join companies such as Enron. Chapter 11 is intended to give companies and other organisations a chance to reorganise, and a fair number do eventually emerge and become profitable companies. The movement claims in the *Washington Post* that a judgement of even \$10 million would wipe out all the assets of all the temples in North America. It numbers its membership in the US at around 75,000.

The schools accused by the 91 plaintiffs in the case have since closed. The temples are incorporated individually and will file separately in their respective states. A \$400 million suit filed in Texas in June 2000 under the RICO statutes (Racketeer Influenced and Corrupt Organization) was dismissed by the court in October 2001 on the grounds that the movement had not abused children for profit or financial benefit, and nor had it deprived the plaintiffs of their rights. ISKCON (the International Society for Krishna Consciousness) welcomed the dismissal as a victory for religious freedom. The current suit is a refiling of the same suit in state courts in West Virginia and Texas, the sites of the two most allegedly abusive boarding schools.

The movement claims that by avoiding huge legal fees and judgements it will be able to create a fund to help compensate the victims of abuse.

New trends in alt-med

Even so, it was entertaining to read the *Independent on Sunday's* take on what's "hot" in alternative medicine, recycling yet more "energy-based health systems" as high tech. Perhaps you'd like to try one of the many forms of biophysics – colourpuncture, gas discharge visualisation, electronic gem lamp therapy. Align your energy fields, making sure the vibrational [sic] rate of your cells, organs, blood, and glands all stay at the optimum levels. Certainly, colourpuncture, which substitutes colour frequencies for needles, sounds a lot less stressful than its acu counterpart. Gas discharge visualisation, developed in Russia, creates a "high intensity electrical field" around the person; the field is then photographed and the image viewed on a computer screen. Gotta say, it

sounds an awful lot like our old friend Kirlian photography. Two NHS hospitals are supposed to be trying out electronic gem lamp therapy, which involves directing light through a gem at diseased tissue in the body, penetrating boldly where chemicals may not go. (Uh ... how does this work exactly? Last we heard, light couldn't get through skin and tissue, but chemicals could penetrate right into cells. Did we miss a science class?) Sapphire is supposed to reduce pain; emerald to reduce inflammation. Note to practitioners: our gem of choice is an opal.

Crackers

Have you ever wondered what actually happens when you crack your knuckles? It seems that when you push or pull on the metacarpophalangeal joints – knuckles – that attach your fingers to your hand you create a small gas bubble in the synovial fluid that both lubricates the joint and acts as an adhesive. That bubble separates the joint, and the cracking sound is the sound of the adhesive seal coming apart.



That, anyway, is the Mayo Clinic's explanation of what's going on. And the good news is: despite what they told you when you were a kid to get you to stop making that sound, cracking your knuckles does not cause arthritis. Do it enough and the joint may get sore, but that's a temporary condition.

Now if the Mayo Clinic could just explain why some people find it so incredibly annoying.

Decomposing

The late John Diamond became if anything more rabid on the subject of why so-called "alternative medicine" does not work during his four-year illness with cancer. The columnist Ruth Picardie, similarly, during her much shorter bout with the disease, tried a number of alternative treatments and came to the same conclusion.

Diamond is cited as impatient and "laddish" in a recent book review by *Sunday Times* journalist Brian Appleyard of *Living Proof* by Michael Gearin-Tosh, in which the author recounts the story of his cancer and his survival in the face of terrible odds and a refusal to do chemotherapy. The point is not whether the book makes any sense; the point is that Appleyard doesn't make any sense. Describing the book as "intellectually rigorous", Appleyard goes on to reject statistics – "they do not, as the best alternative therapies do, take account of the individual" – and goes on to say that it's absurd to say that acupuncture doesn't work, when we know it does but we don't know how. Of course statistics don't tell the whole story for a particular individual, but they are still an important tool in trying to assess whether treatments actually work. As for acupuncture working: the studies we've seen suggest that acupuncture may work to alleviate chronic pain in a small percentage of cases. That is a *very* long way from curing cancer. And an even longer way from Appleyard's contention that "orthodox medicine is successful only on the basis of great wells of ignorance about the workings of the body."

Appleyard concludes that it's "observably true" that "if the mind is positively engaged in the process of treatment, the body is likely to respond." If only that *were* observably true.

Vampire days

We couldn't help feeling a little sorry for Britain's vampires in early February, when the news broke that a German couple who claimed to be vampires had been convicted of murdering a man in what the papers called a "satanic ritual". It can't have been fun to see pictures of people sharing your dress sense plastered around the media and identified as murderers.

The couple in question said the devil had ordered them to carry out the killing, which involved stabbing the victim some 60 times in their apartment, filled with human skulls, cemetery lights, scalpels, and incense. Psychiatrists told the court the pair were suffering from "severe narcissistic personality disturbances." The judge, who from the sounds of it was quite sensible, said the case was not about satanism but about a simple murder, and their own lawyer said on Channel 4 that he believed the claim of demonic possession was a cover.

Certainly, the people we've known who had scalpels (usually doctors and forensic scientists), incense (hippies), and human skulls (well, actually, it was a candle made by pouring wax into a mold of a human skull) have been harmless, as have the vampirish folk we've met on daytime TV. We hope they won't now be treated the way teens in long, black coats were in the US after the Littleton, Colorado shootings.

Skeptic at large . . .

Wendy M. Grossman



Appreciating Asimov

I HAD FORGOTTEN about Isaac Asimov until the other day, when *New Scientist* sent me his newly published autobiographical memoir called *It's Been a Good Life*. Edited by his widow, Janet Jeppson Asimov, the book is mostly a cut-down version of his three-volume (! But that's Asimov) autobiography, published some years back. The additions are primarily snippets from letters he sent to his wife, plus her occasional editorial comments, and an epilogue in which Jeppson reveals for the first time that Asimov's death in 1992 was due to AIDS. Like Arthur Ashe, whose illness was revealed to the public at around the same time, Asimov picked up the virus via a blood transfusion during a coronary bypass operation.

It was enormous fun reading the book; I'm odd enough that I always enjoyed Asimov's unabashed pleasure in his own intelligence and ability.

Asimov was one of those guys who always seems to have been part of my life, even though I never met him. When I was 13, we spent a portion of science class studying human anatomy, and the textbook was Asimov's *The Human Body*. I can't remember if my first contact with his science fiction was before or after that; probably after. Like a lot of people in the late 1960s and early 1970s, I loved the ideas in his stories and the way he played with science principles and worked out the consequences of changes to natural laws. That doesn't mean I thought he wrote great characters: mostly, he didn't. Susan Calvin (roboticist), Elijah Bailey (human detective), Wendell Urth (a sort of immobile scientific detective, similar perhaps to Mycroft Holmes), and Daneel Olivaw (robot detective) are the most notable exceptions.

Despite the quality of his ideas, Asimov's science fiction has fallen pretty much into disregard in the sci-fi world. Things have moved on. People aspire to write literature these days, with real characters. Science on its own isn't enough. Asimov, whose earlier life I never knew about until I read this memoir, had been a research chemist and taught for some years at Boston University School of Medicine. That background gave him plenty of familiarity with scientific disputes, which explains why his early books are so full of them.

Some of my favourites of his fiction were the science fiction mysteries, a set of short stories published in one

volume, in which he tried to play fair with readers by using only known natural laws in the final explanations.

What I hadn't realized was how much non-fiction he wrote. I knew about *Asimov's Guide to Science*, *Asimov's Guide to Shakespeare*, and *Asimov's Guide to the Bible*. I didn't know about the several hundred other books he wrote on topics so varied as to make the average writer's head spin. He notes a big advantage of being so prolific: by the time the reviews of your new book come out, you've written three or four others and the criticisms don't sting as much.

If Asimov fudged a little on the exact count of the number of books he'd had published – the *Isaac Asimov FAQ* points out that his own catalogue even includes a couple of wall posters and a calendar, not exactly books by most people's standards – well, he still set some kind of record. Subtract all the anthologies of short stories in which he had only one entry, and the books to which he only wrote the introduction, and the revised editions, and the books containing nothing but recycled material, and he *still* wrote a lot more books than anybody else.

I first found out about the skeptics through one of James Randi's lecture/demonstrations. But I knew nothing about Randi at all; what made the organization Randi helped found, CSICOP, interesting and worth trusting to me was that his co-founders included Martin Gardner (another whose work I discovered in school in my early teens) – and Asimov. Those were familiar names of people I'd always had cause to respect.

All of which is why I was so surprised to discover I was actually rather angry that he and his wife had taken his doctors' advice and hidden the cause of his death until now. Janet Jeppson Asimov, his widow, explains in the epilogue that the publicity surrounding former tennis champion Arthur Ashe's diagnosis, around the same time, was prohibitive. And yet, it was exactly people like Asimov who were needed in those early days, when the illness still carried a dreadful stigma, to stand up and help remove that stigma. Ashe's illness became public knowledge when a tabloid threatened to expose it, and Ashe decided to publish and be damned. I can't help wishing Asimov had joined Ashe in the campaign he then launched to raise public awareness and end prejudice.

Still: at least we know now. And it was a good life – for us, too.

Ear Candles – The Brain Softening Effect: An Instructive Tale

Norman Pridmore reflects upon his personal crusade against a pseudoscientific therapy

AS SOME READERS may not be familiar with the practice known as “Ear Candling” (also known as “Coning” or “Thermo-Auricular Therapy”) I begin with a brief and uncontroversial outline of what it involves.

Take a hollow, narrowish tube of fabric that has been soaked in wax and allowed to harden. This tube may be up to eighteen inches long. Poke it through a hole in a protective disc of foil or board. Insert the wider end of the tube into the external ear canal, making sure that it fits snugly and forms a good seal. Either sit upright, or lie on your side. Light the other end of the tube. Allow it to burn until within a certain specified distance of the ear. Extinguish it carefully.

At this point the section of the candle that was in the ear may be opened and its contents inspected. Expect to see various deposits and “impurities”, some of a waxy nature. Practitioners claim that warm air circulates and loosens the earwax, which is then drawn from the ear into the base of the candle as a result of a vacuum-forming “chimney” effect.

The therapy is supposed to be effective in treating a host of disorders (a sample list is quoted later in this article). No evidence has yet been given of any of these benefits. The small amount of (replicated) research that has been done (see notes for sources) has discovered no chimney effect, and that the waxy deposits occur regardless of whether the end of the candle is located in an ear, an empty bottle, or in water. It has been intelligently observed that any vacuum strong enough to draw wax from the ear would also distort and possibly rupture the eardrum [5e].

There are well-documented cases of injury as a result of the “therapy”. These include burn injuries to the outer ear canal and to the eardrum, and also com-

paction and blockage due to candlewax deposition. The “therapy” is described as gentle and non-invasive, and especially suitable for children and the elderly. It is growing in popularity even as I write.

My particular involvement began very quietly. A brief mention in my local weekly newspaper was the trigger [1]. The heading attracted my attention straight away – “Alternative Therapies”, it proclaimed in bold type. Hooked, I read on. It was included in a double-page health spread, together with all the

usual stuff about keeping fit, eating a balanced diet, and having regular check-ups. You know the kind of thing.

A paragraph about the wonders of Reflexology (an “Ology”! It must be scientific...) was followed by one on Indian Head Massage. The last paragraph extolled the virtues of Ear Candling. This was no modest appraisal. It bellowed and hectored in terms that a nineteenth century snake-oil vendor would have been proud of. Candling was, according to the article (I quote absolutely precisely, and with the original punctuation and capitals) “a natu-

ral therapy used to successfully treat – Irritation of the ears and sinuses, hayfever, excessive/compacted ear wax, headaches, migraines, sinusitis, rhinitis, glue ear, colds/flu, tinnitus. Helps balance fluids: vertigo, menieres syndrome, underwater diving and flying”. End quotes. Wow!

I was momentarily seduced into speculating about what other kinds of diving there might be, and about whether flying meant the traditional or Yogic variety. One can never tell.

I was irritated by what I read. A year or so previously I had read about candling in the *Skeptical Inquirer* [2]. A two-page article had reported the results of some experiments into candling performed



by a “lad and his dad” team in the USA. The results of the experiments suggested very, very strongly that the claims were bunk.

A few minutes on the Internet confirmed to me that these experimenters were right – that wherever tests had been made the conclusions always pointed in the same direction: candling did not work. Even more, there were strong indications of clear dangers to the practice.

I sent a letter [3] to the editor of the paper suggesting in the most polite and emollient manner that the claims for candling were not perhaps entirely well founded. I suggested that there was no actual evidence for the effectiveness of candling, and quite a lot that gave rise to significant concerns about it. My intention was for the letter to be published, in the interests of balance and truth. I included my telephone number so that anyone reading the letter and wanting more information could request and obtain it directly from me.

My letter went unpublished. I wrote again [4], more sternly and didactically. This elicited a response, a phone call from the reporter who’d written the original piece. I outlined my concerns again. She apologised for the first letter not being published. She assured me that it would appear in the very next edition.

I was grateful for this. She went on to tell me that she knew of people who had undergone the therapy. She also told me of a friend of hers, a qualified nurse, who used the technique with prisoners as part of her work with inmates. She did not tell me which jail. This elevated my concerns to a new level. Nurses, as qualified professionals, possess in the public mind a degree of credibility. Prisoners in jail are in no position to check out whether this or that treatment is going to work, or to harm them. No matter what they have done, they don’t deserve to have their eardrums fried in the name of quackery.

Anyway, after this call, I hooked up to the Internet and printed a selection of material that seemed relevant [5] and which might help to show clearly the dangers of the procedure. I also photocopied the article from *Skeptical Inquirer* that had been my own introduction to the subject. I strolled around to the newspaper’s office and laid these items (some twenty pages) before the reporter, together with a covering letter of explanation that I’d put together in an effort to give some context to them.

The reporter dealing with the story appeared both grateful and slightly abashed. I discovered that her interest was not purely theoretical, as she’d had the “treatment” a couple of times herself. I reflected to

myself that if someone who is supposed to have reasonably well-honed critical faculties falls for this kind of nonsense, then what hope is there for the rest of us...

Despite my efforts, and the assurance I’d been given, my letter was again not published. By this time I had e-mailed the Director General of the Prison Service, interested to find out what “alternative” or



“complementary” therapies were permitted in jails and under what circumstances they were allowed. I quote from the reply I received:

“The Prison service has issued instructions to establishments that only five named complementary therapies (acupuncture, osteopathy, chiropractic, yoga and meditation) may be made available to prisoners at local discretion provided that certain criteria are met.”(6)

The reply went on to say that any requests for other “therapies” must be obtained in advance from the Prison Service Area Manager and the Prison Health Policy Unit, and that no permission had been sought or granted for candling to be made available at any Prison Service establishment, anywhere ... ever.

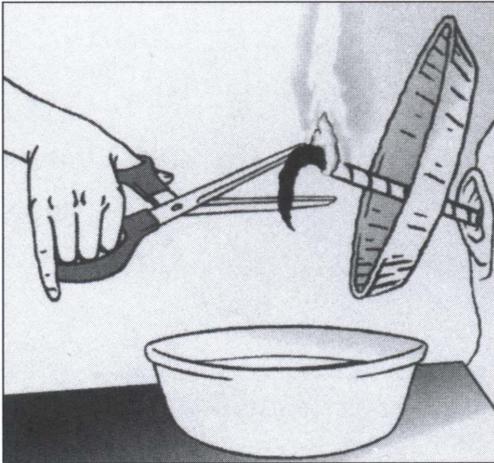
I of course passed this reply on to the journalist with the request that she pass it on to her clearly transgressive nursing acquaintance ...

Another week went by. My letter still had not appeared. By this time I was mightily peeved. Unlike many who must suffer in silence I had the luxury of an alternative outlet through which to vent my spleen. I write a weekly column for my local daily paper, in which I try (and usually fail) to offer a moderate, rational and sceptical view of the world. I decided to tell readers the story of my fight to get my letter on candling published. Funnily enough, only the week before in that same column I’d railed against modern “tripe-mongers” – the host of new age credulists and the like who peddle their tendentious flummeries as

though they had some kind of worth or value. So my next column just took things a bit further and made them a little more specific. I finished the piece with a little flourish, saying that the practitioners of candling should stop immediately – that it was a silly, pointless and dangerous activity, and that they should know better [7].

I visualised a host of candle makers trembling before this onslaught and imagined them casting their waxy paraphernalia by the ton into bulging skips all over the county. Sheer delusion, of course. Not a peep of interest. Not one response. Not even from my usual correspondent the Mad Nun. Ah well ...

Finally the letter did appear. There were a few phone calls as a result of it, and I was able to send out to a few concerned and interested people the information that I'd carefully collated that gave the other side of the story – which was all I'd wanted to do in the first place.



A “therapy” like candling spreads in the same way that an urban myth or legend spreads – there are more people involved in speeding it on its way than there are trying to slow it down. A good way of assessing and demonstrating this is to check the Internet. At the time of writing this a search on Google using the term “Ear Candling” resulted in nearly eight thousand references, “Thermo Auricular Therapy” nearly two hundred, and “Ear Coning” about two and a half thousand. The vast majority of these references connect to the sites of those selling either the “therapy” or the tools of the trade, the candles themselves. Very, very few link to critical or sceptical sites. Two months ago, the first of these terms turned up about three thousand references from the same search engine. Some increase, eh?

During my researches I visited a number of these sites. I was already familiar with the claims made for

the “therapy”, but what I had not expected was the extent to which the claims were repeated time and time again in different places using almost (sometimes absolutely) identical language. So too with the “history” of the practice. Its origins, variously described as being with Native American peoples, or in China, or Greece, or Tibet, or Pharonic Egypt, or even possibly Atlantis, seemed purely a matter of aesthetic preference, given the absence of any hard evidence in any particular direction.

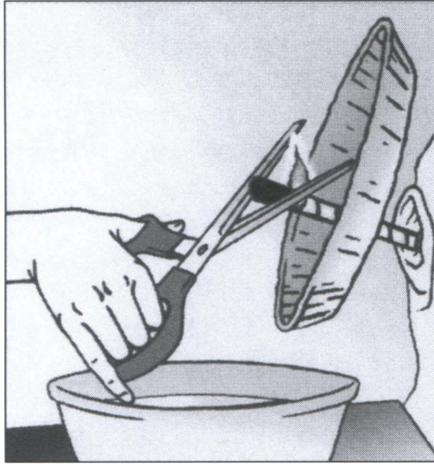
Where mention was made (very, very rarely) of risk, this was usually to do with fire danger, and was designed to discourage self-treatment. The point usually made was that treatment from a “competent therapist” would eliminate this risk entirely. This seemed simultaneously honest and self-serving: a frustrating and difficult combination.

I contacted by e-mail a couple of practitioners. The first to reply was at a loss to know what possible dangers could attach to candling. The second was quite open about the lack of objective empirical evidence in support of the practice, but didn't think this mattered too much. Anecdotal reports of satisfaction from clients were considered entirely adequate by this paragon of integrity. Perhaps the most extraordinary discovery I made was of the theory that had been worked out by a practitioner to account for the supposed therapeutic effects of candling beyond the eardrum (in other words its effects on the organs of balance and hearing, the throat, sinuses and brain). This ingenious person suggested that osmosis was involved, and that through osmotic action and pressure impurities could be drawn through the eardrum from almost anywhere in the body.

The originator of this theory suggested that medical and anatomical research lagged somewhat in providing support, but that as there had to be an explanation it might as well be this one. It had two main virtues to recommend it. The first was that it sounded scientific and plausible. The second was that it could not be disproved.

There are no profound lessons to be drawn from this tale, but perhaps a couple of small ones. The first is that nonsense spreads easily. Richard Dawkins talks of “memes”, and it seems to me that this is quite a useful and helpful way of looking at how ideas spread. An idea does not have to be coherent, or truthful, or supported by evidence, to succeed. The second lesson is that it is worth responding to nonsense. Not only did the letter I wrote get published (eventually), it also became very clear to the journalist responsible for the original story that there was someone who was pre-

pared to check and scrutinise and make an issue of anything dodgy in future. No-one likes a pain in the neck, and that is what I had become ... Perhaps if more sceptics were more active, journalists and the media in general might be a little more careful ... Just a thought ...



Whilst this is pure speculation, I wonder whether there may not be a way to experimentally determine whether concerted action by sceptics can have an effect. The *Observer* newspaper not only publishes a horoscope, but also the tendentious and empirically unsupported assertions that appear in the regular "alternative" health section under the "Barefoot Doctor" by-line. Those who have not read it should do so (for information only) in as tranquil a state as possible, as it is likely to induce either rage or hysterical laughter, both of which can be exceedingly injurious. I suspect that a concerted onslaught of intelligent, well-informed and well-written letters asking for evidence in support of the B-D's assertions, and contesting as many of them as possible (there will be, I promise, no shortage of eminently contestable assertions) may well have an interesting outcome. Anyone care to try?

Magazines like *The Skeptic* (UK and USA versions) and *The Skeptical Inquirer* are useful and diverting, but unless their readers take action and give scepticism a louder voice in society, then there seems little point in them beyond creating a feeling of cohesion and identity within a marginalised and eccentric minority (aka intelligent and rational sceptics). I'm not a scientist or a researcher. I don't even have a degree, dammit! But if I can make my sceptical voice heard, then anyone can. It matters. It really does.

Notes and References

1. *Sleaford Target* (Oct 2001)
2. *Skeptical Inquirer* Vol 24 No 5 (Sept/Oct 2000) –

Special Report "On Ear Cones and Candles" by Philip Kaushall and Justin Neville Kaushall.

3. In possession of author – eventually published in *Sleaford Target* Dec 2001
 4. In possession of author – unpublished.
 5. (a) Abstract from *Laryngoscope* 1996 Oct; 106(10): 1226-9 Ear Candles – efficacy and safety By Drs. Seely, Quigly and Langman of Spokane Ear Nose and Throat Clinic, WA 99204 USA
(b) Sept 02 1998 Import alert# 77-01 "Detention without physical examination of Ear Candles" Attachment – 5/27/99
View at http://www.fda.gov/ora/fiars/ora_import_ia7701.html
(c) Warning letter from USA dept of Health and Human Services to Candle supplier (re. violation of law pertaining to regulation of medical devices)
(d) 'It's Your Health' Web Page of Canadian Govt. on Ear Candling (strongly opposed – emphasises illegality of procedure in Canada). View on http://www.hc-sc.gc.ca/hpb/dgps/therapeut/zfiles/english/publicat/iyh_earcandling_e.html
(e) "Ear Candling" by Lisa ML Dryer. From Internet Site "Quackwatch"
[Http://www.quackwatch.com/01QuackeryRelatedTo/pics/candling.html](http://www.quackwatch.com/01QuackeryRelatedTo/pics/candling.html)
(f) RNID factsheet on "Hopi Ear Candles", RNID Information Services Nov. 1998 also at <http://www.rnid.org.uk>
- Many of the above links will lead to others in the list. In case of difficulty link via Google or any reliable search engine. The best general link is probably the Quackwatch site (<http://www.quackwatch.com>)
6. Copy of Email dated 14th Dec 2001 from David Hillier, Head of Clinical Services, Prison Health Policy Unit.
 7. *Lincolnshire Echo* – Norman Pridmore "Personally Speaking" 20th Nov 2001

Links to sites favourable to candling can be easily found which will provide hours of innocent amusement to surfers. May I suggest just three to start with:

- <http://www.bibkit.com/coning.html>
- <http://www.dakara.com/earchans.html>
- <http://www.healing.about.com/cs/earcandling/>

Modest research has been carried out by Creighton University (USA) – see:
<http://www.allmed.creighton.edu/ear/>
See also James Randi at <http://www.randi.org/jr/02-02-2001.html>

Science or Non-science?

Doug Bramwell examines the features which distinguish science from pseudoscience

How can we tell?

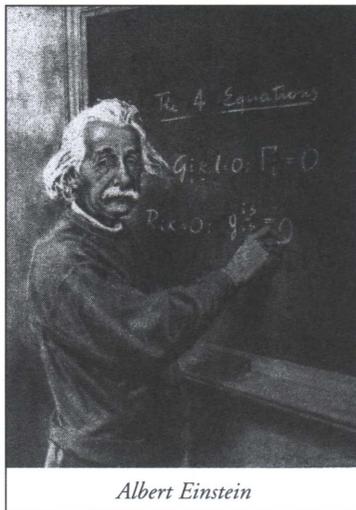
THE PROBLEM OF DECIDING whether a theory or hypothesis is scientific or not is now sometimes raised in semi-popular media, usually in terms of Karl Popper's concept of falsifiability. But, because the rate of dissemination of philosophical ideas is so slow, this means that columnists, together with TV presenters and those whom they interview, are currently discussing how to tell science from non-science in terms of a criterion that has, over many years, been thoroughly criticised by philosophers and, in general, is now regarded as inadequate.

To take only one criticism – and that over-simplified – if a scientific law has withstood severe testing, then working scientists and technologists will consider it to be safe for utilisation in practical applications, on the assumption that induction – the move from the particular to the general – is valid. This shows that Popper was wrong in his belief that induction is an unnecessary concept for, without the inductive move, scientific theory would be of no practical value.

No single criterion

Nonetheless, testability is one of the accepted principal criteria for hypotheses and theories to be regarded as scientific. But hypotheses cannot be tested in isolation, because any consequences drawn from them always involve background ideas and assumptions. Therefore, to be testable, a hypothesis, along with background theory, must predict observable events other than those which it was formulated to explain. Then, failure to confirm the predictions does not necessarily falsify the theory, but may lead only to modifications of the background assumptions.

This predictive ability frequently serves to initiate new research and is sometimes known as the “fruitfulness” of a theory. A well-known example is the prediction, from relativity theory, that light passing near a massive body will be deflected by gravitation. This prediction was first confirmed at the solar eclipse of 1919 and, since that date, the general acceptance of Einstein's theory has led to developments that include cosmological theories such as black holes and inflationary expansion.



Another accepted criterion is the “scope” of a theory or hypothesis, which relates to the number of phenomena that it explains or predicts, and is another measure of its scientific soundness. Relativity theory came to be preferred to that of Newton because it could explain all that was explained by Newton's theory, together with phenomena that Newton could not explain, such as a known, but hitherto inexplicable, variation in the orbit of the planet Mercury.

It appears, then, that no single criterion is adequate to distinguish science from non-science and, in addition to scope and fruitfulness, another generally accepted criterion – simplicity – must be mentioned.

Simplicity is difficult to define and perhaps the most well known attempt is that of the medieval philosopher William of Occam. Known as Occam's Razor, this says, “Entities should not be multiplied beyond necessity”. Do not, for example, introduce supernatural powers to explain spoon-bending or fire-walking if they can be adequately explained by physics alone. But there are arguments about the definition of simplicity. In addition to the number of entities used to explain a phenomenon, some argue, the number of presupposed axioms, or different modes of interconnection, should also be taken into account. Following this trend, there have been serious attempts to accurately define the concept in purely mathematical terms.

If we are happy with a degree of vagueness, however, we can say that the simplest explanation is the one that requires the lowest number of assumptions, leaving it to our generally successful intuitive judgement to decide which of two or more theorems meet the criterion.

Sadly then, because it makes the workings of science difficult to explain to a newcomer, there is not a single criterion, such as falsifiability, by which a hypothesis, theory or explanation can be judged to be scientific.

How can we tell?

Looking at the general characteristics of scientific progress we can see that, when one theory is superseded by another, the observational facts on which the former is based are often retained, refined and added to, while the new theory needed to interpret these facts may usher in radically new concepts.

The theories of Newton and Einstein can again serve as a good example. The quantitative difference between the values of certain critical parameters, as predicted by the two theories, and later confirmed, is marginal. However, the concepts of space and time needed to interpret the differing equations are radically different – Newton's separate and inert time and space are replaced by relativity's integrated space-time with its dynamic world-shaping characteristics. We still use Newtonian mechanics to design cars and fairground rides, but turn to Einstein when we are concerned with particle physics.

In contrast, pseudosciences – non-sciences that pose as science – are not progressive in this sense. They are not founded on stable bodies of knowledge that integrate with well-tested and criticised scientific theories. Nor do they check their predictions – if they have any – either against existing knowledge or by carefully controlled experimental programmes.

Pseudoscientific ideas do not progress. They remain static or, in the face of challenging comment, introduce new or borrowed ideas willy-nilly. A current pseudoscientific fashion, for example, seems to be to introduce the word “quantum”, or the word “energy”, into attempts to explain some supposed phenomenon. These words sound scientific, and may impress people that do not know scientific aims and method, but they do not lead to testable predictions. A current example is the common use of “electro-magnetic energy” as an explanation both of medical problems and claimed successes of “alternative” treatments. Power lines, it seems, cause leukaemia in children, but magnets in your shoes can cure almost anything.

An example, sadly still with us, is Hubbard's theory of dianetics which, as I understand it, is based on supposed axioms and an *a priori* idea that all mental and psychosomatic ills arise from a single source. Here is non-science at its worst – science is based neither on axioms nor on *a priori* ideas.

Although not always possible, a prime objective of science is to achieve strictly logical deduction from observations to predictions, and criticism of arguments by other qualified scientists is a major characteristic of the scientific method.

It is standard practice for researchers to submit new ideas to the scientific community through publication in professional journals. The journal editors do not publish work however until it has

been “peer reviewed”; that is, submitted to other scientists for criticism and judgement on its suitability for publication.

No such organised self-criticism is to be found in pseudoscience, and criticism by traditional scientists is usually considered, by pseudoscientists, as an indication of closed-mindedness. The pseudoscientist sees any contradiction between science and his own ideas as a sign of creative originality on his part, and fails to understand that while scientists should not dismiss new ideas out of hand, they are reasonable in expecting ideas that contradict the established body of scientific knowledge to be supported by a proportionately high level of empirical evidence.

I am deliberately merely mentioning the laboratory testing of paranormal phenomena. Most readers will be familiar with the long and controversial history of testing, criticism and discussion relating to this subject, and with the fact that its status – science or pseudoscience – remains controversial.



Isaac Newton

Symptoms of non-science

If one way of spotting non-science is its failure to meet generally accepted criteria, another is to be aware of some of its common characteristics. Known to most skeptics is the fact that anecdote can never count as evidence. Personal, unmeasured assessment of a happening is notoriously unreliable, and subsequent recall and retelling, even more so. Interpretation in terms of established beliefs and desires inevitably play their part.

While talking to a fire officer recently, I learned that the fitting of a “black box” in a fire engine demonstrates this clearly. In one case, when the vehicle was involved in a minor accident, onlookers judged that the engine was travelling at excessive speed, while the black box showed that the speed was well within the prescribed limit. Two-tone horns and flashing blue lights can give an exciting but inaccurate impression.

“Coincidence” is often seen as confirming the paranormal. The discovery that a relative had a heart attack at roughly the same time as one was thinking about him or her, is felt to be remarkable. We can remind the person who tells the story of the thousands of occasions on which one thinks of relatives without the accompaniment of “coincidental” events. The teller is usually unimpressed.

Similarly, the probability of the results of repeated tossing of coins, or throwing of dice, are commonly grossly misjudged, even by those with a little knowl-

edge of probability theory. However, I must confess that when, in a supermarket, my bill comes to, say, exactly £50, I have to consciously suppress that “well, well, fancy that” feeling.

Most skeptics are aware that the burden of proof lies with the person who makes some extraordinary claim, but non-skeptics are difficult to convince. “You can’t prove that reflexology does not work”, we are typically told. True indeed, but try to convince the reflexology advocate that the skeptical argument is not weakened by this humble bit of logic.

Many people also think that if, at present, some observed phenomenon cannot be explained by science, then it can be used as an argument for a supernatural cause – either religious or paranormal. Examples well known to skeptics are, again, fire-walking and spoon-bending, both now fortunately explained to most people’s satisfaction in terms of normal physics.

In addition to such physical happenings, the “science can’t explain it” argument is commonly applied to the origin of the universe, the nature of consciousness and the “could machines think” argument, as well as to ethical and aesthetic experience and values. It is usually impossible to convince the user that there is the slightest chance that in the long term – it may take a few hundred years – science may come to solve the problems.

Another tendency, more common it seems to me than many skeptics think, is the use of after-the-fact-reasoning. “A” happened before “B”, therefore “A” was the cause of “B”. I find, from casual conversation, that this logical fallacy is used, with frightening

frequency, by people to convince themselves that an alternative medicine has been successful in treating an ailment.

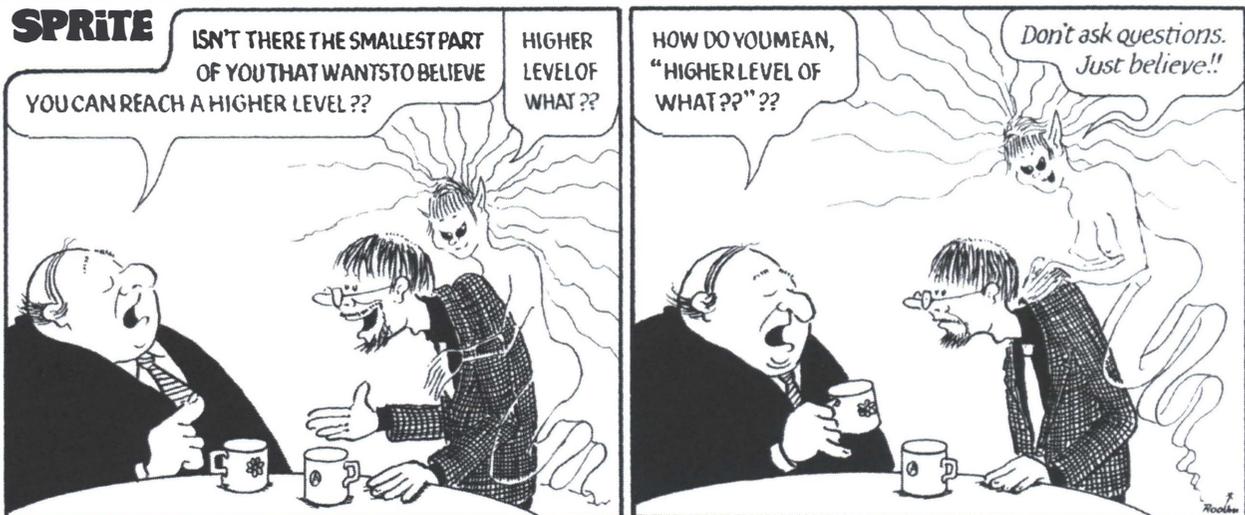
Why do they believe?

My opening question was “How do we tell?” The only light that my article seems to have shed is that there is no easy answer to give to those who are not convinced of the unique methods and success of science. We skeptics rightly resent the lack of proportion in media presentations of the “skeptics versus believers” variety, the more so when we see how resistant to change in opinion the bright, thoughtful people around us can be. Why?

One suggestion appeared in an article entitled “Why Bad Beliefs Don’t Die” by Gregory W Lester, in the November/December 2000 issue of *Skeptical Inquirer*. In introducing his article, the author commented on the tendency among some skeptics to “demean and belittle people whose beliefs don’t change in response to evidence”. Lester points out that this attitude is born of failure to understand the biological purpose of beliefs and the need for them to be resistant to change.

In brief, because the senses are limited in their ability to detect danger, the brain augments sensory data by beliefs about the external world and its dangers. These beliefs have survival value in being resistant to short term sensory assessments that all is safe in the external world, and this resistance persists when discussions turn to matters scientific and skeptical. So, skeptics, be patient with your friends.

Doug Bramwell is a mechanical engineer turned technical journalist. He has, for many years, been interested in science and its philosophical implications.



Skeptical Stats

- Number of Americans over 100 years old: **50,000**
- Percentage of Britons who donate blood annually: **5**
- Weight of the Waterford crystal ball dropped above Times Square at midnight on New Year's Eve: **1070lbs**
- Amount of compensation for sexual and emotional abuse demanded of Hare Krishnas: **\$400 million**
- Number of plaintiffs: **91**
- Number of subscribers projected in 1998 for the Iridium global satellite phone network in 2002: **1 million**
- Number of subscribers projected in 1998 for Iridium in 2006: **4.5 million**
- Date Iridium filed for bankruptcy protection: **March, 2000**
- Number of flowers bees have to visit to make 1 kilo of honey: **4 million**
- Number of UK banks behind the schemes Enron used to hide its losses: **3**
- Percentage of British girls aged 11-17 who are dieting: **19**
- Percentage of British girls aged 11-12 who are dieting: **14**
- Percentage of US workforce employed in Silicon Valley: **1/3 of 1 percent**
- Number of Pop-Tarts dropped on Afghanistan as part of US food aid during the first month of bombing: **2.4 million**
- Number of inches of penis extension spam emailers offer to add: **3+**
- Amount Britain spent on Prozac and other SSRI antidepressants in 2000: **£310 million**
- Amount Monsanto is spending on research to genetically engineer corn so breakfast cereal won't get soggy in milk: **£40 million**
- Amount of profit declared by Amazon.com in Q4 2001: **\$5 million**
- Amount of Amazon.com's long-term debt: **\$2.2 billion**
- Number of profitable quarters in Amazon.com's entire history: **1**
- Percentage of Sky News viewers who think Valentine's Day is stupid: **68**
- Number of embryos that failed in the successful attempt to produce one cloned kitten: **87**
- Percentage of British girls aged eight to 15 who do not know how to boil an egg: **40**
- Maximum number of eggs nutritionists say we should eat per week from all sources including baked goods: **4**
- Average cost of a "free" telephone reading by American TV psychic claimant "Miss Cleo": **\$60**
- Number of complaints received over 18 months by the Federal Trade Commission: more than **2,000**
- Number of states in which fraud claims have been filed against the Florida-based Psychic Readers Network and Access Resources Inc, which operate the hotlines: **9**

Sources: 1 *New York Times*; 2 BBC; 3 CNN; 4 *Independent*; 5 *Washington Post*; 6,7 Merrill Lynch; 8 SEC; 8 <http://www.didyouknow.cd/fastfacts/food.htm>; 9 *Sunday Times*; 10,11 Girl Guides Association; 12 *Red Herring*; 13 *Harper's*; 14 bulk email; 15 *Independent*; 16. *The Sun*, reported in the *Annals of Improbable Research*; 17,18,19 *Business Week*, SEC filings; 20 Sky News phone-in poll on February 14; 21 *Independent*; 22 Girl Guides Association; 23 US National Institutes of Health; 24,25,26 *Independent*; 27

Thanks for clippings to Rachel Carthy and Barry Karr.

Both Hits & Misses and Skeptical Stats depend heavily on reader contributions of clippings, story leads, and odd statistics. Please send contributions to news@skeptic.org.uk or via post to the address on the masthead (p.3).

A Case of Spirits

Chris Willis looks at the history of spirit photography

THE CAMERA cannot lie – or can it? From the mid-Victorian era to the 1920s, thousands of people were hoaxed by photos which supposedly proved the existence of ghosts. A fascinating selection of such photographs has now been put online by the American Museum of Photography (their site can be found at <http://www.photographymuseum.com/seance.html>).

Unscrupulous photographers made large sums of money by producing photographs of sitters accompanied by other-worldly “spirits”. These “spirits” were usually supposed to be the ghosts of the sitter’s recently deceased friends or relatives. Desperate for some reassurance of life after death, the bereaved sitters were unlikely to question the result.

The first spirit photographer was American William H Mumler of Boston, who produced hundreds of photos during the 1860s. Many of his victims had lost sons, fathers, brothers or husbands in the American Civil War and were desperate for consolation. One of Mumler’s most vocal opponents was circus impresario PT Barnum. He condemned Mumler as a fraud, and pointed out that the unscrupulous photographer was exploiting the vulnerability of people whose judgement was clouded by grief. Barnum gave evidence at Mumler’s trial for fraud in May 1869. Mumler was charged with having “swindled many credulous persons, leading them to believe it is possible to photograph the immaterial forms of their departed friends” [1]. To show how easy it was to fake a spirit photo, Barnum and a photographer friend, Abraham Bogardus, produced a photo which appeared to show Barnum with the ghost of Abraham Lincoln.

Spirit photos were easy to fake. Popular knowledge of photography was limited at this time, and most people did not know that such pictures could be produced by a simple double exposure. Another method was even simpler. In this era, exposures of up to a minute were needed for photographs. So, while the subject was sitting still and gazing at the camera, the photographer’s assistant, dressed in suitably ghostly robes, would step into the picture and stand behind them, moving gently so as to create a “ghostly” blur which would render his or her features less recognisable. Alternatively, a dummy could be put into place behind them, and revealed by pulling back a curtain. Other methods involved tampering with the photographic plate during processing.

Mumler narrowly escaped conviction when the judge reluctantly decided that there was insufficient evi-

dence against him. Others were not so fortunate. In Paris, Édouard Buguet and his associate M. Leymarie were imprisoned in 1875 after investigators discovered the dummies and cardboard cut-outs which they used to create “spirits” for their photographs.

Spirit photography enjoyed a revival in Britain after the First World War. One of the best-known spirit photographers, William Hope, took over 2,500 spirit photographs before being exposed as a fraud by Harry Price of the University of London Council for Psychical Investigation [2]. Sir Arthur Conan Doyle tried to rescue Hope’s reputation in his 1922 publication *The Case for Spirit Photography* [3]. This book is lavishly illustrated with spirit photographs which Doyle felt proved his case. To the modern reader, these appear to be simple double exposures, but knowledge of the technical aspects of photography was less common in the 1920s, and many people appear to have been convinced by Hope and others of his kind.



Magicians such as Harry Houdini were indefatigable in their quest to expose such frauds. In 1922, the popular press gleefully reported the exposure of two fraudulent “spirit photographers” by a body of professional magicians: the Occult Committee of the Magic Circle [4]. This body specialised in investigating the claims of self-styled mediums and psychics, many of whom used magician’s tricks to fool people into thinking they had supernatural powers.

One of the most notorious post-war cases was that of spirit photographer Ada Emma Deane. On Armistice Day 1924 she produced a remarkable photograph which appeared to show the spirits of dead soldiers hovering over the Cenotaph in Whitehall. The photo was published in the *Daily Sketch* [5], which asked whether any of its readers recognised the faces in the photo. Unfortunately for Deane, many of them did. The “spirits” were not dead soldiers but living footballers and boxers, copied from other photographs [6]. The furious *Sketch* condemned Deane’s “clear intention ... to play upon the feelings of unhappy people who had lost sons in the war” [7]. It challenged her to produce a genuine photo under test conditions, offering her a reward of £1,000 if she was successful [8]. Deane refused the challenge [9], giving the *Sketch* ample justification to proclaim her “a Charlatan and a Fraud” [10].



Spirit photography continued well into the late twentieth century. One incredible photo (reproduced to accompany an article by Matthew Sweet in *The Independent on Sunday* last year [11]) shows Conan Doyle’s face apparently materialising in the middle of a

blob of repulsive ectoplasm which is emerging from a medium’s nose. As Sweet comments, such “supernatural elements now telegraph their paste-and-paper fraudulence”. But to many people at the time they appeared to be proof of what they desperately wished to believe – that their loved ones had some kind of life after death.

Modern writers are rightly skeptical about spirit photographs [12]. But spirit photography still exists, albeit in a slightly different form. Not long ago I visited a New Age fair where an enterprising photographer offered to take a photo of my aura for an extortionate fee. She seemed surprised when I declined the kind offer. But maybe spirit photography will soon be superseded by more modern technology. A recent UK television documentary featured a medium who claimed to be able to contact the dead via the internet. Now there’s a terrifying thought. Imagine being bombarded with junk email from beyond the grave!

References

1. *Harper’s Weekly*, 8 May 1869, p 289.
2. Harry Price: *Confessions of a Ghost Hunter* (London: Putnam, 1936), p 169.
3. Arthur Conan Doyle et al: *The Case for Spirit Photography* (London: Hutchinson, 1922).
4. See, for example, *News of the World*, 14 May 1922, p 12.
5. *Daily Sketch* 13 November 1924, p 10.
6. *Daily Sketch* 15 November 1924, pp 1, 2 and 15.
7. *Daily Sketch* 17 November 1924, p 13.
8. *Daily Sketch* 19 November 1924, p 2.
9. *Daily Sketch* 21 November 1924, p 1.
10. *Daily Sketch* 21 November 1924, p 2. An account of the Deane fraud is also given by Harry Price in *Confessions of a Ghost Hunter*.
11. Matthew Sweet: “They Saw Dead People” in *The Independent on Sunday* magazine, 23 December 2001. pp 18-21.
12. See for example, Fred Gettings: *Ghosts in Photographs, The Extraordinary Story of Spirit Photography* (New York: Harmony Books, 1978).

Chris Willis teaches at Birkbeck College, where she recently completed her PhD on gender and popular fiction. She wrote about Harry Potter and also about Mrs Gaskell’s Elephant in issue 15.1.

SKEPTICS IN THE PUB

Speakers: TBA

Skeptics in the Pub is an evening held once a month (in a pub, strangely enough) for anybody who has an interest in, or is skeptical about, the paranormal. Each month an invited speaker gives a talk on their chosen specialisation. The talk is followed by an informal discussion in a relaxed and friendly pub atmosphere. The event is held at the **Florence Nightingale Pub, Westminster Bridge Road, London**. Entry fee is £2. For further information, such as details of forthcoming meetings and travel directions, please contact **Nick Pullar 07740 450 950, nickp@coleridge.co.uk** or log in to <http://www.skeptics.org.uk/pub>.



Rhyme and Reason

Steve Donnelly

A Rael Expert

TO QUOTE the broadcaster, Terry Wogan: “Is it me?” or is the world just going mad? I am an inveterate listener to BBC Radio 4, especially the flagship *Today* programme. In particular, I am always interested to hear scientific topics being addressed by John Humphrys, Sue MacGregor, and the rest of the crew (despite the occasional inanity of the questions) and it is always good to hear my fellow scientists doing a good job of explaining their interests to 6 million radio listeners. And so, as the redoubtable John Humphrys introduced an item on cloning a couple of weeks ago, I was wondering which academic expert the *Today* programme researchers would have selected to discuss this scientifically – and ethically – challenging topic. Professor Steve Jones perhaps? Or that standard fallback “our science correspondent, Pallab Ghosh”. No, neither of the above – instead the chosen expert was . . . Rael. Who? Well let me give you a bit of biographical background on the BBC’s chosen expert on human cloning.

In December 1973, French motor racing journalist, Claude Vorilhon was driving through the extinct volcanoes of the Massif Central near Clermont-Ferrand when he happened upon a landed UFO and a group of friendly aliens with whom he engaged in conversation (as one does). It transpired that these friendly, scientifically and spiritually advanced folk were eager to get in contact with mankind but had been waiting for the right French freelance journalist to come along. What they needed, you see, was someone to set up a terrestrial embassy through which they could easily make contact with mankind on a regular basis without favouring any particular nation, culture or creed. (By the way, it is not clear to me what the Aetherius Society had, or have, to say about this, as their founder, taxi-driver – and later Prince and Archbishop – George King, was declared to be Earth’s voice on the Interplanetary Parliament back in May 1954). But continuing with M. Vorilhon’s story – the aliens, known as the Elohim, wished to help mankind create “a world of leisure, creativity and fulfilment, free from the burden of money and the need to work . . .” They certainly helped our journalist friend achieve these latter two objectives by getting him to change his name to Rael and to found the Raelian religion to which members donate a goodly chunk of their income. A major objective of the Raelian movement is to obtain the funding and an appropriate piece of real estate near Jerusalem (on the Gaza strip maybe?) to enable the construction of

Earth’s intergalactic embassy. The Elohim have kindly provided a detailed specification for the embassy building which should be constructed in the middle of a park and should include (amongst other things) a swimming pool and a dining room capable of seating 21 people. The grounds surrounding the embassy (minimum 1050 metres in radius) must have the status of an “extra-territoriality” – a bit like the Vatican – and the Elohim must, of course, have free transit rights through the airspace above it.

But what on Earth (or elsewhere) has this got to do with human cloning? Well, the connection is that rather than being the products of Darwinian evolution, we (i.e. the human race) were manufactured in a test tube by the Elohim many millennia ago. Primitive man then understandably regarded our lab-coated creators as gods and – superstitious people that they were – worshipped them and founded the many different world religions, the better to extol their glory. Now that we have entered the 21st century, however, and are capable of creating life in test tubes ourselves, the time has come to abandon our mantle of superstitious religious belief and get back in contact with our creators, through the good auspices of Rael. And given the fact that he is the recipient of the Elohim’s advanced and ever so ancient knowledge of the creation of life – the very knowledge that gave rise to the creation of mankind itself – who better could the BBC consult as an expert on human cloning?

When I met Rael on a Central TV programme many years ago, he was dressed entirely in white, was relaxed and smiling and was surrounded by a number of adoring, attractive young women half his age. I was feeling rather irate at the idea that anyone could possibly take this nonsense seriously and one of Rael’s vestal virgins shouted at me “Are you happy? You don’t look happy! But we’re happy!”. Thinking about it, with the prospect of soon having a beautiful embassy building somewhere warm (with swimming pool and dining room for 21 people), being surrounded by adoring young twenty-somethings and never having to work again – and now being a scientific expert to the BBC on human cloning, I suspect that Claude Vorilhon made a better career decision in December 1973 than I have ever made.

Notes

Further information about the Raelian movement can be found at: <http://www.rael.org/>

Philosopher's Corner

Julian Baggini



THERE ARE ONLY two things I disbelieve as a matter of principle: things that are false and things that are nonsense. The difference between the two is important, and is giving me a headache.

One useful philosophical principle that can help us decide what to accept as true or reject as false is the principle of charity. This requires us to interpret the position under examination in the way which makes it as rational and cogent as possible. Put another way, the principle states: don't erect a straw man.

I believe this principle is absolutely central to earnest intellectual inquiry. We are often tempted to portray the opinions of our opponents in such a way as to make them look as irrational and implausible as possible. This makes it easier for us to score points against them and confirm our own views. But our victory is hollow unless we test the strongest version of their claims. For example, if you want to prove you have a better football team than Manchester United you have to play their first eleven. Beat their reserves and you can always say "we beat Man U", but you know deep down the contest was rigged. Similarly, you have only defeated your intellectual opponent if you have taken on the strongest case supporting their belief.

So, if you consider any view while following the principle of charity, by the end you should be able to decide whether it is true, false or whether the jury's still out. Simple.

But what about nonsense? This is much trickier. The process of assessing a point of view or argument is much more straightforward if you can make sense of it. Unless we want to play at crude relativism, it is quite clear, for example, that the statement "it is safer to use MMR than not" must be either true or false. With nonsense, we don't say it is true or false, we say it doesn't make sense. Thus, "the yellow anger sung exponentially" isn't true or false – it's gobbledegook.

You might be tempted to say this is false, but problems arise if you do. Hence Bertrand Russell's obsession with the statement "The present King of France is bald". If there is no present king of France, to say this is false creates a logical problem because it would imply that "The present King of France is not bald" is true. But of course that isn't true either. Philosophers love such logical conundrums as much as non-philosophers find them ridiculous.

Here's the cause of my headache: how do you decide whether something is nonsense or whether you just don't understand it? There are clear examples of both. Some nonsense is easy to spot, such as the rubbish I wrote above about yellow anger. On other occasions it is obvious that we are in no position to judge. Such would be the case if I failed to follow a lecture in theoretical physics. I know full well that I just don't know enough about it to decide if it's nonsense or not.

The problem arises in the intermediate cases, what we might call the Derrida problem. Someone with a British intellectual training who tries to read Derrida often becomes utterly confused. The trouble is, Derrida is not talking theoretical physics. His subject matter is the same as that of his British contemporaries. So there is an expectation that we should be able to understand him and when we don't, it's easy to think that he's just talking nonsense.

But to do this seems chauvinistic. Surely the principle of charity, in this instance, decrees that the most charitable explanation of Derrida's difficulty is that it just is difficult and you need to spend much more time studying him if you want to make sense of him. Until and unless one makes such an effort, judgement must be suspended. And it's no good saying that certain of his pronouncements are just incoherent. We must at least allow for the possibility that Derridian discourse, though paradoxical from our viewpoint, is intellectually rigorous and just as capable of being rationally assessed as our home-grown philosophy. The semblance of contradiction, for example, may simply be an artefact of our way of reading him.

However, this is troubling. We want to disbelieve the false and the nonsensical. Indeed, many skeptics argue against certain beliefs (perhaps particularly New Age ones) on the grounds of their incoherence rather than their falsity. If the principle of charity demands that we suspend judgement when we don't understand something – or when we think we understand it to be nonsense but others insist we just haven't been thinking about it appropriately – it seems we might have to suspend judgement about too much.

Therein lies the cause of my headache. How do I best assess the views of those who, to the extent to which I do understand them, seem to be talking nonsense, but of whom some might say I just don't understand them at all? It's not just my problem – it's one for all skeptics.

Do Astrologers Have To Believe In Astrology?

Nick Champion questions whether “belief” is a useful concept when applied to astrology

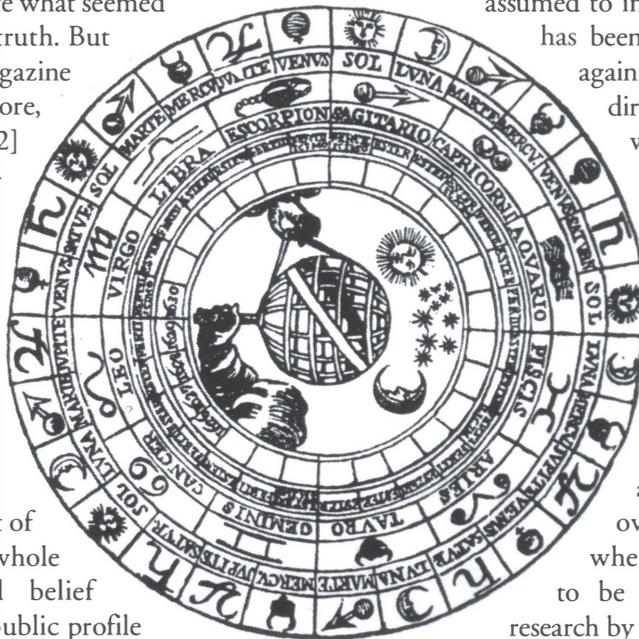
THE SKEPTIC MOVEMENT’S historic task is to counter the rise in belief in paranormal claims – a goal enshrined in the Humanist denunciation of astrology in 1975, in this case specifically to reverse the increased acceptance of astrology [1]. The trouble is that none of the signatories of the famous statement had ever actually worked out whether acceptance of astrology was increasing. It was just assumed. No tests were done, no evidence was gathered. It was not considered necessary to do this in order to state what seemed to them to be a self-evident truth. But what if nobody takes magazine horoscopes seriously any more, as Lucy Sherriff argued? [2] What if acceptance of astrology as a whole is actually declining? If that were to be the case skepticism would remain as an interesting intellectual activity, but the sense of cultural crisis that led to the creation of CSICOP in 1976 would disappear.

Astrology occupies a sort of public front line in the whole debate about paranormal belief largely because of the high public profile achieved by sun-sign columns. For many years, as an unofficial “expert” in the history of astrology I have fielded questions from journalists who want to know (a) whether belief in astrology is increasing?; (b) if it is, then why?; and (c) how many people currently believe in it? The answers to these questions were pretty much already formulated in their minds as follows: (a) belief in astrology is increasing and has been doing so ever since the 1960s boom in alternative ideas; (b) the cause is the collapse in traditional church-going, which has opened a spiritual vacuum – which in turn is filled by horoscopes, tarot cards and so on; and (c) a lot of people believe in it. Although skeptics would replace the journalists’ (b) (which is in fact a standard Christian explanation for declining church attendance) with a lack of scientific understanding and education [3], the fact is that the answers to all these questions is a resounding “don’t know”. Between them Erich Goode and Glenn Sparks have seriously cast doubt on the

established notion that belief in astrology is necessarily incompatible with either traditional religious faith or knowledge of science [4].

So how many people actually believe in astrology?

The figures for belief in astrology are usually based on questions about readership of horoscope columns or private visits to astrologers, which are activities assumed to indicate belief in the subject. It has been pointed out time and time again that, when people are asked direct questions about matters which impinge on their private beliefs, their answers depend on who is doing the asking and how they feel at that particular moment [5]. And that’s before we even face the ultimate problem of how the question is asked. One way or another, the figures cited for belief in astrology in a range of studies over the last thirty years are, when taken together, so variable as to be almost meaningless. Recent research by Glenn Sparks found that 89% of church-goers and 91% of non-goers agree with the statement that “Horoscopes DO NOT contain accurate information” [6], suggesting a level of belief in astrology of around 10% across the population as a whole. Yet the weakness of such questions is clear: they invite the subject to make an evaluation of objective truth rather than asking them how they actually feel. At the other end of the scale Sue Blackmore and Marianne Seebold elicited much higher answers from a small group of women undergraduates at the University of the West of England [7]. They found that 13% would consult an astrologer before settling down, 22% knew their moon sign (suggesting they had taken active steps to find this out), 24% had read a teach-yourself astrology book or had taken a course in the subject, 39% valued the advice given in horoscope columns, 70% regularly read such columns, 85% agreed that their sun-sign description suited their personality and 100% knew their sun-sign. So, how would we fix a level



of belief from this sample? It's clearly anywhere between 13% and 85%.

One solution is to fall back on attempts to distinguish "strong" believers from "weak". Yet, here again the results vary wildly. In the UK Bauer and Durant established a figure of 5% for "serious believers" while in Germany Paulik and Buse's "strong believers" were almost eight times as numerous at 38% [8]. The existence of such a discrepancy between two such similar countries suggests fatal methodological flaws and essentially arbitrary judgements about what behaviour might differentiate strong belief from weak. It's more likely that at one end of the attitude spectrum there is a tiny number of people who consult astrologers obsessively and at the other there is a small group who denounce it vigorously. The bulk of the population exists in a grey mass somewhere in the middle. They may have no strong opinions either way. They might think one thing in the morning and another in the afternoon, or they might quite happily hold contradictory beliefs at one and the same time.

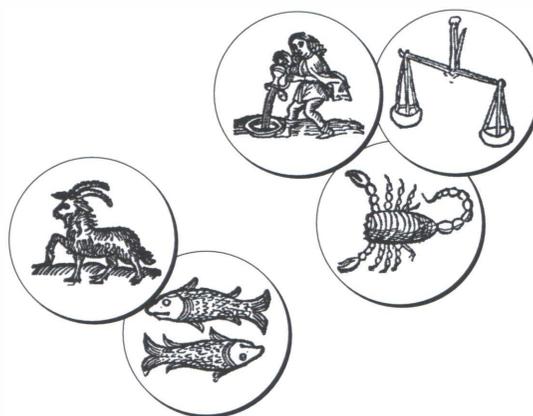
And what does "belief" mean?

And then there's the whole question of the definition of belief. Strictly speaking, the word's definition is neutral, meaning simply "trust or confidence" in the object of belief and, in the examples given in the *Concise Oxford Dictionary*, the objects of belief can be either religious, intuitive, a matter of opinion or an accepted fact. Thus it is possible to believe both in the Virgin birth and the existence of gravity without implying that one is more true than the other. In this sense a belief does not have to be true but neither is it necessarily false: it is the perception of the believer that counts. However, in much of the skeptical scientific literature, a "belief" is automatically defined as false unless, in rare cases, proved otherwise. A summary of the skeptical arguments is given by Robert Park, Professor of Physics at the University of Maryland in his recent book, *Voodoo Science*, well reviewed by Chris French in a recent issue of *The Skeptic* (Vol. 14 no 2). The book's stature is endorsed by jacket-blurbs from Richard Dawkins and Paul Gross, author of *Higher Superstition*. Park's argument is not only that beliefs are necessarily false but that they result from a physiological malfunction of the brain [9]. In other words, belief is roughly equivalent to mental illness. The very word belief has become so loaded that it's surprising that anyone admits to belief in anything.

Do astrologers believe in astrology?

With all this in mind I devised a questionnaire asking delegates at the 2000 British Astrological Association conference how they would respond to the question "do

you believe in astrology?", with four possible answers (a: yes, b: no, c: don't know and d: other) to account for every eventuality, and invited them to explain their reasons. I sought a quantitative result, but one which could only be justified in the light of qualitative material, the respondents' justification of their answers. I received forty-seven replies out of a total of 220 questionnaires distributed, a return of 21%. Although quantitative conclusions from such a small sample can be misleading, the responses were surprising. Only 27, or 57%, ticked "yes", the other 43% opting for "no", "don't know" or "other". A breakdown of these three options is also interesting. While 1 opted for "don't know", only 3 chose "no", but 14 (30%) ticked "other", disputing the basis of the question. Belief, according to these astrologers, is not an appropriate word to apply to astrology.

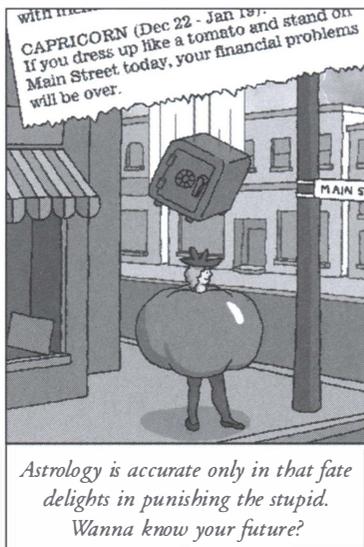


What I found most surprising, though, is that the reasons given for each answer did not differ. The overwhelming response was that astrology is such an obvious part of the natural world that either (a) of course one believes in it, (b) of course one doesn't need to believe in it because it works or (c) the whole question of belief is irrelevant. I've been backing up my questionnaires with interviews and so far I've spoken to about twenty astrologers in the UK and USA, all "opinion formers" in the sense that they are prominent writers or lecturers on the subject. Again, what I've found surprising is the almost uniform rejection of any religious dimension in astrology and the simple claim that one doesn't believe in astrology because of the simple fact that it works. And that, of course, takes us into territory covered by the Barnum Effect, the argument, as applied to astrology, that astrologers believe that astrology works because they are inclined to agree with its statements and claims.

So what do we do with astrologers who, in research done to date, should surely be classed as "strong" or "serious" believers in astrology, yet claim that they don't believe in it at all? Can we argue that they really are believers – they just don't know it? This solution is somewhat patronising, a little like well-meaning mis-

sionaries travelling the Empire lecturing the natives on the inadequacies of their religions.

The fact is that the argument that says that astrologers are necessarily believers may be flawed. Basically it runs like this: all research into astrology indicates that its claims are false, therefore nobody can accept it on the basis of the evidence and, finally, its adherents are therefore “believers”. We can then supposedly quantify the number of believers and reduce the total by convincing them of the evidence against astrology.



However, putting to one side for the moment the issue of whether astrologers' personal observations of astrology actually working can be explained away, we have a number of other issues to consider. First, for those astrologers who are swayed by empirical research, there are in existence published positive results for astrology – and that's without getting into the complex issues surrounding the Mars Effect. These results may be flawed, but then so is a great deal of research in all areas. That's not the point. What matters is that they exist and have been published. Second, the astrological literature regularly contains trenchant responses to the skeptics [10]. And third, there are schools of thought within astrology which argue for a range of philosophical reasons that scientific tests (including, as it happens, the positive ones) are irrelevant [11]. That skeptics might dismiss these arguments as irrelevant overlooks the fact that they exist and are influential. So, are astrologers who form a perfectly reasoned assumption that astrological claims are true to be considered “believers”, as if they should know that the object of their belief is false? The waters are further muddied by research which tests levels of gullibility among skeptics, blurring the distinction between them and “believers in astrology” [12].

What I'm saying is, that half-way through my research into belief in astrology, I'm no longer convinced that belief is a useful category for measuring astrology – or anything. And, if anyone can convince me that it is, I'll be very happy.

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Reviews

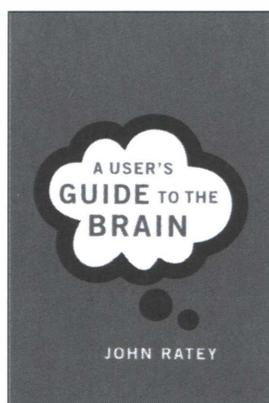
HEADCASE

A User's Guide To The Brain

by John Ratey

Little, Brown, £12.99, ISBN 0316854069

The author of this 400+ pages book is clinical professor at Harvard Medical School. He presents an extensive review of the present knowledge of the working of the human brain. The subject is very complex, and the amount of information supplied is immense, but the author really has made an effort to make it very digestible, much more than most other books on this subject, by very richly documenting it with case stories of patients.



Short chapters on specific aspects of the working of the brain are coupled with neurological and psychological functions and pathology such as: perception, autism, tinnitus, learning difficulties, attention disorders, emotion, tics, compulsive obsessive disorders, memory and also love. Many of those functions are made more understandable by using metaphors and very often some very good advice is given to understand, overcome or prevent some disorders. All this with a lot of warm humanity and common sense.

He takes very firm stands against the Freudian school and the recovered memory crowd and definitely is not an adherent of the mind-body dualism theory and documents these views very well. The new fad of overrating the EQ (emotional intelligence) is also brought to more discreet proportions. His analysis of the "social brain" and the use of this concept in therapy is admirable. His therapeutic approach also has the merit of taking away much of the guilt that other therapeutic systems sometimes induce.

For the health professional, for whom it is intended, this book does not provide many ready made answers but it certainly has the merit of making one think and reconsider some therapeutic approaches. A small draw back for those who would like to deepen the subject is that all references are not to articles in journals but to other books.



For the layperson it will be tough but very instructive reading, or rather study, but the determined ones will enjoy it.

Willem Betz

ARE FAIRIES SO DIFFERENT?

Fairies in Nineteenth-century Art and Literature

by Nicola Bown

Cambridge University Press, £40, ISBN 0521793157

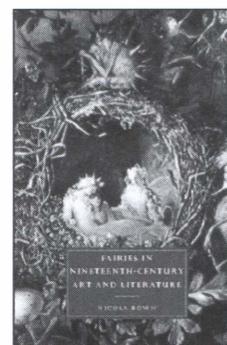
Victorians were fascinated by fairies. Ariel, Puck, Oberon and Titania were the subject of countless paintings. But Victorian fairies were not the twee little beings that we see nowadays on greetings cards and "Flower Fairies" books. These were something altogether more sinister. Victorian painters such as Richard Dadd and John Anster Fitzgerald painted Bosch-like fantasies of grotesque creatures engaged in bizarre activities which verge on the surreal.

But why were the Victorians so interested in these strange, mythical beings? Nicola Bown argues that it was an expression of nostalgia for a vanished rural past – "the industrial revolution killed the fairies". From the onset of Darwinism to the notorious case of the Cottingley Fairies, belief in fairies gradually declined. Bown explores various artistic and literary manifestations of this decaying belief. I was particularly intrigued by her discussion of Darwinism in relation to Dadd's "The Fairy-Feller's Master Stroke" – a painting which most of us only know via the Queen song of that title.

It is a shame that Bown does not reproduce more of the paintings, though presumably this would have made the cost of the book prohibitive. It is best read alongside the lavishly illustrated catalogue of the Royal Academy's 1997 "Victorian Fairy Painting" exhibition.

The book offers a fascinating insight into the Victorian psyche. But were the Victorians so different from us? Was nineteenth-century belief in fairies so very different from modern beliefs in crop circles, alien abduction and supernatural spoon-bending? Maybe we can't really count ourselves superior.

Chris Willis



RELIGION OR MAGIC?

A Magick Life: A Biography of Aleister Crowley

by Martin Booth

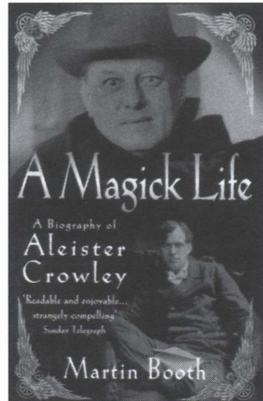
Coronet Books, £8.99, ISBN 0340718064

If you believe in magic as much as in little green men from Mars, it is difficult to be impressed by the most famous magician of the last century.

Edward Alexander Crowley was born into the peak of the Victorian Age in 1875 and lived until 1947 to see the first and second World Wars. Before Crowley discovered magic at age 22 he was a chess player of repute and he wrote poetry of more than ordinary ability. He became a mountaineer with numerous first ascents to his name; initially in England and Scotland, later in the Alps, and eventually in the Himalayas. For all his daring and pioneering climbs, he was known as an exceedingly careful and deliberate mountaineer. Yet, "Crowley was to develop into a person forever pushing the boundaries of experience, reacting to emotions and impulses rather than reason." (p. 22).

He was considered the greatest magician of his age. This means he was opposed to Christianity, he borrowed from Theosophy, Spiritualism, and other psychic beliefs of the time. Crowley described magic as using one's will power to accomplish things without obvious means. "Magick is the Science and Art of causing Change to occur in conformity with Will." (p. 82). He compared this to the Roman Catholic Mass where the will of the priest changes the bread and the wine. The astral body of light, the universal ether, and human thought were part of the faculties needed for accomplishing magic. The author of the biography says that much of what Crowley suggested as magic, that is the imagination, the subconscious, the reaching for control by the mind, have today become topics in the psychiatrist's office (p. 85).

Crowley claimed to have been inspired by the Rosicrucians, by the history of the Knights Templar, the Cathars, and Albigensians. Organizations Crowley founded or belonged to bore such names as the Golden Dawn, "Lichte Liebe LebenTempel", the Theosophical Society, "Ordo Templi Orientis", or "Argentium Astrum". Clearly the concepts of the nineteenth and early twentieth centuries regarding what was magic and what is real differed from the ideas of later periods.



Booth has written a competent biography of an exceptional character. It is easy to read, but much more difficult to understand or to sympathize with.

Wolf Roder

TIMESLIP

How To Build A Time Machine

by Paul Davies

The Penguin Press, £9.99, ISBN 0713995831

Like "The Tale of Peter Rabbit" with a bodice-ripping cover, this little book will not satisfy. Not only did I not learn HTBATM, I learned that it is not possible in the world as we know it (that is to say without our being able to harness antigravity, space warps, wormholes or other devices from *Star Trek*).

Although a hardback, the text is only 11 by 14 cm and the 136 pages are interspersed with 36 full-page illustrations which add little to the product. Most of them are sketches of famous scientists which appear to have been created by tracing a photograph with a thick felt pen. Where the illustrations are referred to in the text they are identified by page numbers, but the pages that have illustrations are not numbered. You get used to this after a while. Don't expect any sex, maths, religion or UFOs and you won't be disappointed. Although he is no Carl Sagan, Professor Davies' reputation as a physicist is imperilled from time to time by such remarks as:

"CERN propels electrons at 99.999999999 per cent of the speed of light... so fast that it falls short of the speed of sound by a literal snail's pace."

"Cylindrical surfaces have no intrinsic curvature." (Don't write me: I know what he meant and he should have said "right circular cylindrical surfaces".)

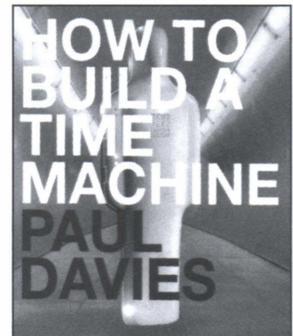
"...thus rescuing the cherished law of change conservation." (I think he meant "charge conservation".)

"...the motion of two (billiard) balls after collision is completely determined by the initial speed and direction of the cue ball." Clearly he doesn't play billiards or pool or snooker.

I also found irritating his quoting all very small numbers in the form "a billion trillion trillionth of a centimetre".

Conclusion: science-popularisation-wise this book doesn't cut the mustard.

Frank Chambers



GALVANISED**An Entertainment for Angels: Electricity in the Enlightenment Age**

by Patricia Fara

Icon Books, £9.99, ISBN 1840463481

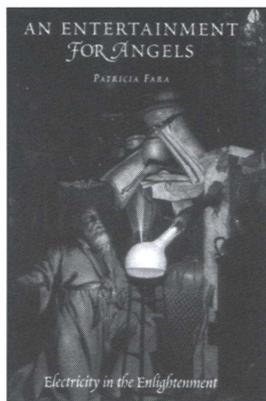
“Electricity has one considerable advantage over most other branches of science, as it both furnishes matter of speculation for philosophers and of entertainment for all persons promiscuously.” Thus Joseph Priestly in the 1790s, providing a succinct summary of the subject of this thoughtful and lucid book by Patricia Fara, an historian of science and an expert on 18th century magnetism.

Between about 1730 and 1790 entrepreneurial philosophers and self-styled “electricians” (not scientists yet – that word would not appear for another forty years) like Benjamin Franklin, Volta, Nollet, Boyle and Galvani began the work that would one day make a world run by electricity possible.

While theories about electricity and magnetism were plentiful, money and resources were not and for most experimenters publicity and the ability to earn money from entertaining shows and practical devices were as important as obtaining and publishing results. Hence the long running Anglo-American dispute over pointed versus rounded lightning conductors, the popular treatments available at the London Electrical Dispensary and Graham’s (literally) sparky “Celestial Bed”.

The history of scientific discovery is never a simple, linear narrative progressing towards the inevitable triumphant conclusion and Fara charts the usual false starts, blind alleys and squabbles that are as much personal as theoretical. Distinct national schools were important too: the French favouring an algebraic approach to their experiments, the British tending towards theologically flavoured theories concerning aethers, particles and “the Electrical fluid”.

Once the dramatic effect of electricity on isolated muscles had been shown, thoughts about treating the paralysed or resuscitating the dead inevitably followed, leading to some gruesome experiments on fresh corpses and subsequent speculation about the link between life, death and electricity. Speculation that would lead Mary Shelley, whose husband had enthused as an Oxford student over ‘a new engine’ (the galvanic battery), to



produce in 1818 an enduring literary classic describing the career of a certain fictional experimenter by the name of Frankenstein.

John Gillies

SWEET NOTHING**The Book of Nothing: a natural history of “zero”**

by John D Barrow

Vintage, £8.99, ISBN 0099288451

Barrow is a professor of mathematical sciences, and author of “Theories of Everything” and “Impossibility”. This is a curiously substantial book about how nothing can amount to something (rather than the dire idea that nothing can amount to anything).

The first part concerns the significance of zero: “The Indian system of counting is probably the most successful intellectual innovation ever devised by human beings.” Ever tried reckoning with Roman numerals? The zeros in our computers’ binary logic are, so to speak, much more than half the story. (Small numerical complaint: which nowt – archaically an oafish person – chose for a science book a font where 1 is indistinguishable from capital I?)

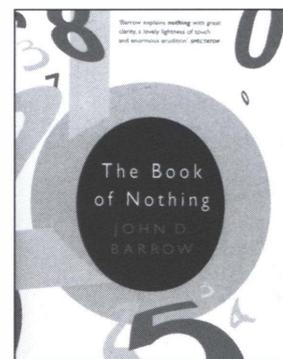
Here we find an amazing demonstration of how the natural numbers can be generated from the null set, and Barrow provides a very fine illustration of the null graph on p.163.

The second half discusses the nature of the vacuum. This soon leads into relativity and quantum theory, in as clear a way as one could hope for in a popular science book. It emerges that there is more to the vacuum than the mechanical difficulty of creating a perfect one: it is neither empty nor inert, “and without its powerful contribution, the unity of Nature could not be sustained”.

There is a peculiar cosmic significance for ourselves: “Universes that contain life must be big and old, dark and cold. If our Universe was less of a vacuum it could not be an abode for living complexity.” One of Barrow’s pet themes is the Anthropic Principle, although he is restrained about it here. On the other hand, for this reviewer there is rather too much space devoted to old theological ruminations about creating something out of nothing.

One last word – a gift that we might like to make use of – nullibilists: those who believe that no spiritual beings exist.

Paul Taylor



SIMPLY DIVINE**Netherworld: Discovering the Oracle of the Dead**

by Robert Temple

Century, £17.99, ISBN 0712684042

A frustrating book on an interesting subject. It's a study of historical methods of divination from both the West and the East, leaving out astrology (on the sensible grounds that there's been an awful lot written about that already) but including the "I Ching". The Western section is fascinating, but the interest drops off as he moves Eastward.

Still, it starts well. The discovery and (very) partial excavation of the giant underground complex that once housed the Oracle of Baiae is fascinating stuff, and it's shameful that this amazing structure hasn't been properly investigated yet. The beginning of the book is taken up with its rediscovery and structure, which leads into an entertaining potted history of classical oracles, both deliberately faked and honest. He shows evidence for drug use both by oracles and by unwary questioners, who could easily be drugged to the eyeballs by the oracular priests and then killed if they showed any signs of being less than impressed when regaining consciousness. Other suggested methods of sacred cheating include the use of carrier pigeons – doves and pigeons were apparently a feature of ancient temples, though there's no mention of how they would be transported between them.

Then we come to what Temple considers the other main technique of Classical divination – haruspicy; divination by entrails. Sensitive readers may not wish to read further, as his hands-on research involved persuading his local abbatoir to let him study the entrails of just-killed animals. Valuable for understanding the ancient methodology and casting light on some obscure texts, though with a high yuk factor for us squeamish cityfolk.

I don't think it's much worth reading further, though. Up till this point, while you get occasional reminders that this is a "fringe" book, they're fairly minor. The occasional complaint about closed-minded academia and a spirited defence of Hoyle and Wickramasinghe's "Lifecloud" theories in the context of comets and meteors as portents is about as strong as it gets. But once he gets on to the "I Ching", he takes it as a licence to explain his pet theories on "event lattices" and the book suffers accordingly. A pity, really. The Shang Oracle Bones deserve a better popular treatment than this.

As I said, the first part is worthwhile reading in spite of this, but I can't imagine this book will gain him any credit in academia, which, alas, is still the acid test for theories.

Rachel Carthy

PEAR-SHAPED**The Universe in a Nutshell** (Unabridged audio cassettes read by Simon Prebble)

by Stephen Hawking

Random House, £16.99, ISBN 1856866661

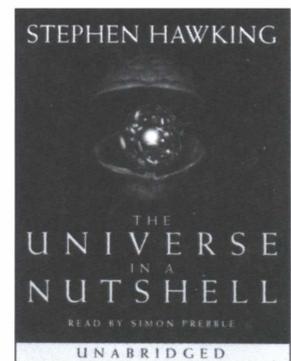
In 1995, my wife and I went on a tour of Egypt, booked from London. We became friends with an English lady who was a double widow, both husbands having been "joiners" (carpenters in American). She had brought along a copy of Stephen Hawking's phenomenal best seller, "A Brief History of Time". She did not open it once during the trip. Later, back in England, we visited her home. "Had she read the book?" I asked. No, she had not.

I had heard it said that Hawking's book was probably the least read of any best-seller, although I imagine that is just speculation. I reviewed "Brief History" after it came out and found it enjoyable, although not particularly informative. Like a lot of popular science, the only people who understood it were those who already knew the subject. Oh, you pick up a few pedagogical pointers when a book is well-written, as "Brief History" was, but that is about all. I doubt anyone can much learn science from popular books. Only the science literate should read them. Thankfully, the science illiterate do not, because the romanticized view of science they inevitably present is nothing like the real thing.

"The Universe in a Nutshell" is read in the pear-shaped tones that only a British actor can provide. Hawking should use Simon Prebble as the voice in his synthesizer, in place of that simulated Swedish accent.

But then, the "wheelchair guy," as Homer Simpson calls him, has a great sense of humor which comes out in his writing. And, once again that writing is excellent. Except for the first chapter, which is just boiler plate about Einstein probably written by a hack, I believe the rest of the book is largely Hawking's creation, with only editorial help provided.

Still, it will be even much harder than "Brief History" for the uninitiated to follow, with discussions on space-time loops and m-branes that can only make your head spin if you haven't heard these ideas before. There are some interesting interludes where Hawking talks about the possibilities of time travel and the future prospects for humanity, neither very optimistic. So, the tapes, which take about four hours, are still worth listening to.



Victor Stenger



LETTERS

It's a Fare Cop!

I was distressed to read of poor Julian Baggini's mortifying experience with London Underground (*The Skeptic*, 14.3). For some reason it sounded familiar. And then I remembered. The once-famous philosopher CEM Joad was apprehended for fare dodging in the late nineteen forties. In his case he'd been doing it for years, and had even confessed to it in print (in his book 'The Testament of Joad') in 1938. After he was caught the previously rational and atheistic Joad slid into a belief in the superstition known as Christianity, to the distress of some of his admirers and the amusement of others. A lampoon at the time celebrated this -

*Professor Joad, that clever bod,
Lost his ticket and found his God!*

I hope that the innocent Mr Baggini will be stronger than the manifestly guilty Dr Joad in resisting supernatural consolations. I suspect that he will, but one can

never be sure in these confusing and irrational times. Incidentally, what are the statistics concerning the probability of philosophers getting nicked in this way? Would a season-ticket help?

*Norman Pridmore
Lincs*

Selective Criticism

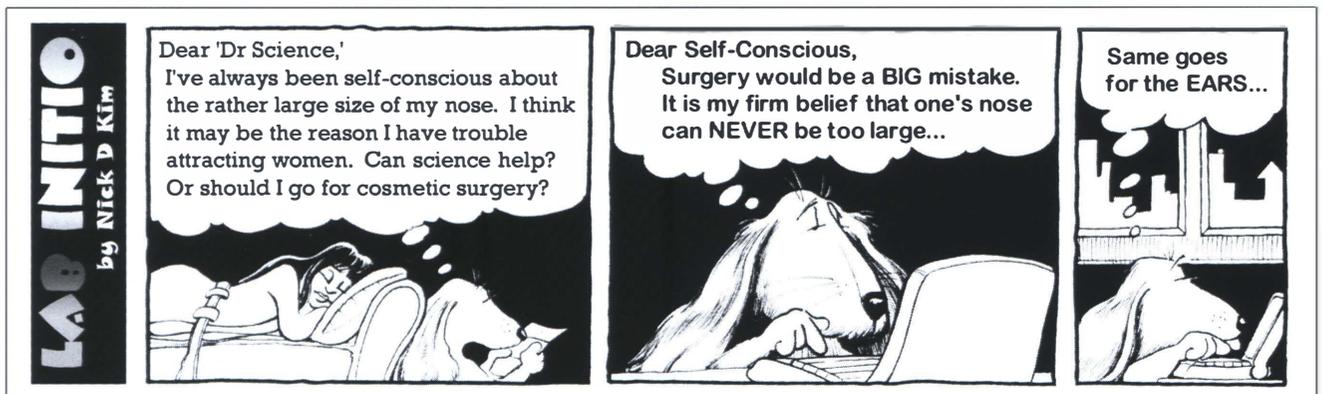
It's a pity that Steven Donnelly appears to have relied so heavily on Richard Wiseman for his criticism of Gary Schwartz's experiments with gifted mediums (*The Skeptic*, 14.3). Professor Donnelly may not have known that Schwartz has not only issued a decisive rebuttal of Wiseman's criticisms (Schwartz, G., *Paranormal Review*, 2001, issue 20), and hence those reproduced in the Donnelly article, but by publishing a second paper in the most recent issue of the *Journal of the Society for Psychical Research*, Schwartz has provided more recent and no less impressive evidence of paranormal information transmission under controlled conditions.

Quite apart from refutations of specific criticisms, Schwartz makes the point which others have emphasised to Richard Wiseman: that selective criticism which concentrates on some and ignores other evidence inconvenient to one's beliefs, is neither fair nor scientific. Thus in preliminary experiments which Schwartz recorded in his first paper, there are many examples of highly specific pieces of accurate information which could not have been obtained by cold reading, body language, smell detection, breathing rate changes or prior knowledge. Professor Schwartz has challenged others to show that similar findings can be produced by cold reading etc under identical single-blind, sitter-silent procedural conditions. Until then it would be prudent if skeptics who find the results too unpalatable to accept were to adopt the normal practice of keeping quiet.

*Montague Keen
London*

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