Volume III, No. 1 January/February 1989

The British & Irish SKEPTIC

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

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The Amazing Randi in Manchester
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Hits and Misses

Steve Donnelly

Batman Digs Robin

Was Robin Hood killed by vampire bats? This is a question recently posed by the Society for the Advancement of Irreproducible Vampires and Lycanthropy Research according to the *Independent* on 5 January. The society wants to hold an all-night vigil in the area where Robin is thought to be buried in an attempt to discover vampire activity. This would enable the burial site to be pinpointed. They would then request that the body be exhumed. According to the legend, Robin was killed by his female cousin who over-bled him when trying to cure his fever with leeches (highlighting the dangers of alternative medicine). The owner of the site, Lady Margarite Armytage has said "I have taken solicitors' advice. I do not want anything to do with these people". It sounds bloody batty to me.

Toe and Heal?

Any foot fetishist with indigestion might perhaps benefit from a session with a reflex zone therapist of the feet, otherwise known as a reflexologist. This particular brand of quackery appears to be getting a foothold in the U.K. and, according to advertising, the services of Ms Dawn Newman, 'Qualified Reflexologist & Massage Therapist', there are three main schools of reflexology in England. You may not be aware of this, but there are regions of the feet that relate to all major organs and parts of the body. Reflexology works (or should I say doesn't work) by the practitioner rubbing a finger over the victim's foot to feel for 'crystals' under the skin. Practitioners claim that the crystals form from waste deposits accumulating at the nerve endings and indicate problems in specific areas of the body. The foot is then massaged so as to crush these purported crystals so that the bloodstream can flush the deposits away. According to reflexologists, the technique can give relief to a range of conditions including sinus problems, migraine, rashes, stiff joints and digestive disorders (well, they do say that an army marches on its stomach). So next time you have sinus problems, forget all the usual remedies, simply get a friend to massage your toes! The leaflet goes on to point out that reflexology is not yet available on the NHS—you'll just have to foot the bill yourself!

Red Stars

The *International Herald Tribune* on 10 January revealed that for the first time ever, an astrology column has appeared in a Communist Party newspaper in the USSR. The newspaper, *Moskovskaya Pravda*, the official organ of the Moscow party, described its astrologer, Eremei Parnov, as 'a specialist in the art of white, black and other magic'. Mr Parnov, whilst making no startling pronouncements, claimed that the fact that this is the Chinese year of the snake promises complete harmony between earth and sky and that the stars indicate that *glasnost* will thrive in 1989. These are presumably the same stars which, according to the *Daily Mail* on 31 December, predict a problem year for the Soviet Union. In particular, the *Mail* claims that when Mars forms its conjunction with Pluto in late November, the Soviet government will be faced with problems that only the military can resolve. The *Tribune* article also claims that a recent sociological study showed that 15% of the Soviet population are interested in parapsychology, 34.5% in

alien spacecraft, 23.6% in ESP and 18.1% in transcendentalism. In paranormal beliefs at least, the USSR is keeping pace with the West.

Shrouded in Nonsense

It was too much to hope that something as conclusive as carbon dating would be sufficient to convince everyone that the Turin Shroud is a mediaeval forgery. In the last issue of the *British & Irish Skeptic*, Joe Nickell, shroud investigator, said that 'there may be some really pathological believers who simply can't accept what everyone else is able to accept'. One such pathological believer seems to be author and shroud historian Ian Wilson who, in an article in the December issue of *World* magazine, dismisses Joe Nickell's artistic fabrication theory because he feels that the apparent blood stains on the shroud 'seem too genuinely "natural"'. He goes on to ask 'could someone have been specially crucified for the purpose?' An article in the *Universe* on 30 October originated this theory when it reported that a leading Catholic doctor, Michael Straiton feels that the shroud image may be the (presumably miraculous) imprint of a dead Crusader crucified by the Saracens. The article does not say whether Dr Straiton believes the Crusader to have been the Son of God. But just in case he cannot maintain interest in the Shroud, Mr Wilson has another line of attack. An article in the *Observer* on 16 October reported that he is calling on the Catholic Church to submit for scientific examination two *handkerchiefs* which are believed to bear the likeness of Christ's face. With this request and a call for renewed testing of the Turin Shroud's image as 'carbon dating is not always reliable' he is planning on keeping the Vatican busy in 1989.

Clairvoyant Condemned

For anyone who has the feeling that a belief in the paranormal never did anyone any harm, the *Yorkshire Evening Post* on Christmas Eve provided yet another sad example of how wrong such a feeling can be. It reported that a coroner criticised the irresponsible behaviour of a clairvoyant who apparently told a lonely pensioner that he would die before February. After the prediction the pensioner, 79 year-old Walter Petty, became a recluse and on 5 December he hanged himself. The coroner, Mr James Turnbull, said the deceased had told his niece in September of the fortune teller's prediction but that it was not possible to tell whether it had had any significant bearing on Mr Petty's outlook.

Bent Astrolabe

After much careful consideration the magazine *Popular Astronomy*, in the January issue, announced its *Bent Astrolabe* award for the biggest astronomical clanger of 1988. The award went to the *Star* newspaper for its front page, headline story on the 'giant human face ... carved into a mile long slab of rock on Mars'. The *Star* article claimed that the face was discovered by French scientists studying photographs from the Viking space probe. Ian Ridpath, the editor of *Popular Astronomy*, points out that NASA scientists attributed the apparent face on these 12 year old photographs to a trick of the light. The *British & Irish Skeptic* would like to congratulate The *Star* on its receipt of this award which is a tribute to the standard of the newspaper's journalism.


THE STAR
THE NEWSPAPER THAT'S LIGHT YEARS BEHIND
WIN! WIN! WIN! From us to you, with love
See Pages 14 & 15
AMAZING PICTURE SPECIAL
THE FACE ON MARS
JOURNEY INTO SPACE—Pages 2 & 3

Gina's Dream

Perhaps one of the oddest stories of 1988 was the report that the headless body of Donald Campbell, the former land and water speed record holder, had appeared in Coniston Water, the lake where he died in 1967. The *Northern Echo* and the *Guardian* on 22 November claimed that Campbell's daughter, Gina, the previous week, had 'had this most macabre dream ... that someone had found my father's body and put it on display'. The story began when amateur divers reported seeing a headless corpse 100 feet below the

surface of the lake about a mile from where Campbell's boat, Bluebird, came to grief during his attempt on the world water speed record. Gina Campbell said that she felt it possible for her father's body to have been preserved for 22 years. Articles in both newspapers the following day, however, pointed out that the badly decomposed body, which was recovered by police divers, was not wearing a boiler suit—Campbell's attire when he died. Police were last reported to be studying missing person files in an attempt to identify the body. Maybe a psychic could help.

Profits in the Ascendant?

A question which always strikes me when reading advertisements for astrologers or clairvoyants, intent on earning their livings using their 'powers', is 'why don't they simply predict the outcome of a horse race and put a few bob on the outcome?' The answer usually goes something like 'this would be an abuse of God-given powers'. Well, a group of astrologers has recently abandoned this type of scruple by forming the *Gambling and Spirituality Workshop* and has, according to the *Guardian* on 5 December, correctly predicted the winners of the Oaks, the Derby and the 2,000 Guineas! The group meets each weekend to consult the planetary charts for the races which are of interest, searching for cosmic tips; for instance a horse called Desert Orchid was chosen for the 2.30 at Sandown because Venus was in Scorpio (obvious, isn't it?). The *Guardian* claims that the results obtained, on the day that their journalist, Seumas Milne, participated, were better than random with a small profit being made on the day's betting. It seems that the odds were not astronomical!

Monster Odds

Whilst on the subject of betting, the *Sheffield Star* on 4 November reported that mountaineer Chris Bonington is so certain of the existence of the elusive Yeti in the Himalayas that he has made a bet at odds of 150–1, with William Hill the bookmakers, that proof of the Yeti will emerge. Bonington was quoted as saying that 'I haven't yet found enough proof to convince the Natural History Museum but we did discover the footprints.' This is a reference to a series of photographs of footprints which he and colleagues took recently on a recent expedition. Bonington attacked reports which claim that a British Army officer, Lieutenant 'Daddy' Newman, invented the Yeti story in 1916.

Yellow Glows of Texas

The weekly newspaper *Psychic News* can normally be relied on to provide coverage of who is in communication with whom in the spirit world but is usually fairly light on skeptical coverage of purported paranormal events. On 21 January, however, they ran a story which included details of a skeptical investigation by members of the American Gay Atheists. The tale begins in Crosby, near Houston in Texas, where the Lemond family claimed that a pile of wood in their back yard was emitting a mysterious glow which reflected a silhouette of either the Virgin Mary or the face of Jesus. The family are devout Roman Catholics and believed the light to be a message from their mother who died last year. Now the saga might have gone unreported if it weren't for the fact that each night up to 4,000 people began gathering to catch a sight of this mysterious phenomenon. And this is where the American Gay Atheists come in. Don Sanders, a member of the organisation, together with some colleagues, unscrewed a floodlight bulb in a nearby carwash and discovered that before you could say 'Bernadette' the 'miraculous' light had disappeared. But investigative skepticism can be a dangerous activity; apparently Mr Sanders was forced to replace the bulb when both rocks and insults were hurled at the atheists.

Come back Galileo

The American Association for the Advancement of Science was told on January 17 that although 62% of British people and 72% of Americans knew that the Earth goes around the sun, only one-third of the population of either country knew how long it takes. These figures come from tests conducted at Oxford University by Dr John Durant and Dr Geoffrey Evans and at Northern Illinois University by Professor Jon Miller. The *Guardian* on 18 January quoted Dr Durant: 'What reason shall we give for the fact that most people have not yet caught up with Nicholas Copernicus and Galileo Galilei?' Fewer than half of the Americans surveyed accepted evolution compared with more than 75% of the British. But don't let's applaud ourselves - nearly 60% of British surveyed thought that a laser beam worked by focusing *sound* waves—perhaps they all owned Compact Disc players!

Ghost Wanted

I'm fairly sure that the word doesn't exist but the 10th Duke of Atholl appears to be in need of the services of an *inorcist*. The *Sunday Times* on 18 December reported that the Duke, who inhabits a 13th century castle in Perthshire, is trying to acquire a

ghost in order to attract more tourists to his castle. When medium Lee Lacy was called in to tempt any shy spirits out of their closets he reported that the castle was already haunted by the ghost of a friendly 10 year old child who died of consumption 150 years ago. Unfortunately, an amicable minor is not the kind of wailing and chain-rattling spectre which is needed to attract the 'white knuckle' sector of the tourist market. Any unemployed, traditional, unfriendly, ghost reading this article who can provide two impeccable character references please contact the Duke personally. Perhaps you can raise his flagging spirits!

L. Ron Writes Again?

If a report in the *Sheffield Journal* on 2 December can be believed, the literary world has recently experienced an astonishing demonstration of life after death. The newspaper published an article on phobias which was essentially a review of L. Ron Hubbard's book, *Dianetics: The Modern Science of Mental Health.* The article referred to Hubbard's odd ideas on phobias in the book as 'a new theory by scientist and author L. Ron Hubbard.' The odd thing is that Mr Hubbard, multi-millionaire, tax-evader, science-fiction author and founder of the Church of Scientology shuffled off his mortal coil three years ago and so normally would not be regarded as in a good position to come up with a new theory of anything. Equally strange is the fact that his book on Dianetics which contains the 'new theory' was first published in 1950. The *Guardian* on 22 November published an article on Hubbard which was somewhat better researched than the piece in the *Sheffield Journal*, in which they reported that some of L. Ron's followers have recently sought a High Court injunction to prevent the publication of his boy scout diary. They claimed that his presence on earth had been of 'cosmic significance.'

Medium or Psychic?

Psychic News on 4 February cleared up a little semantic matter which may have been confusing their readers when they explained the difference between a medium and a psychic. Apparently a medium can be psychic but a psychic is not necessarily a medium. This is because a person endowed with a psychic gift will generally be clairvoyant and thus able to see into the past and the future, but a medium is in communication with spirit forms. This means that a medium is psychic but uses the gift to link in with the spirit world and not see directly into the past or future. Got it? Confusingly, in the same issue it was revealed that the well-known astrologer, Russell Grant, is psychic and used to perform as a medium in spiritualist churches in the West Midlands. Can it be, perhaps, that Russell foretells the future on the basis of information on the positions of the stars, in the past and future, communicated to him by denizens of the spirit world?

Swinging the Lead

Any reader who, like me, has recently erected a clothes dryer in the back garden had better be on guard against the bad vibrations which may result from the hammering of a stake into the ground. In the last issue, Caroline Richmond reported on a meeting which she described as the 'launch of this year's new disease, geopathic stress.' The *Guardian* on 7 January ran an article in its *New Age* column which shed some obfuscation on the mysterious streams of energy, flowing in the Earth which give rise to geopathic stress. The writer of the article, Jonathan Sale, had hit on an elegant solution to a problem of bad vibrations which had sporadically afflicted him when he was in his kitchen—he had the kitchen demolished. The article does reveal, however, that simpler solutions may be possible to problems of geopathic stress. In the first instance, you should call in a pendulum-swinging diviner who will be able to chart the path of the 'black (energy) stream' which is causing your particular problem. Then by hammering lengths of copper pipe into the ground he will be able to 'turn the black line into a white by a form of staking, a type of earth acupuncture'. Perhaps you should call the diviner in to survey your garden and advise on safe positioning of your clothes dryer.

The Sanghyang Jaran Dance

Chris Wright

Walking on fire in Bali

In August 1988 I was on holiday in South East Asia on the island of Bali in Indonesia. With the recent interest in walking on hot coals in the Western world I decided to attend a *sanghyang jaran* dance (generally known as a 'fire dance' by the tourists), and report on my observations to readers of the *British & Irish Skeptic*.

The fire dance was one of a series of Balinese dances which took place in the village of Bona on the back road between Gianyar and Blahbatuh, about a forty minute taxi drive from where I was staying. Unfortunately, like many other places, Bali has found out that there is money to be made from tourists by demonstrating their native culture; in this case, traditional dance and drama. This tends to give some of the occasions a distinctly staged air. However, this show seemed less 'touristy' than most. It was performed at night in a temple lit only by burning torches, just as it had always been before the arrival of the package tour.

The evening was to consist of the *kechak* or monkey dance followed by the *sanghyang dedari* dance and then the *sanghyang jaran* itself. The musical accompaniment for these dances consists of a choir of fifty to a hundred men who provide orchestration by means of counterpatterns of vocal sounds complementing their rhythmical body movements. The choir, known as a *kechak*, has its origins in an old ritual *sanghyang*, which translates as 'trance dance'. I will not dwell here on the *kechak* or the other dances, except to say that they were beautifully performed and very interesting to watch. The spectacle was greatly enhanced by the use of torchlight which created an unreal, almost magical atmosphere.

The high point of the evening for me was the *sanghyang jaran*. Before this dance started the arena was cleared of all the singers and other dancers. The essential function of the dances is religious and it is only recently that they have begun to be performed publicly as entertainment. The religious function is primarily an exorcism of spirits, which is believed to promote peace and health within the village. Specially selected groups of boys and girls are 'sung' into a trance by a group of women who sing the special repetitive *sanghyang* song which beseeches the good spirits to descend from heaven. They are brought out of the trance by a priest blessing them with holy water. The dance area was of beaten earth and was about thirty feet square with the audience sitting on three sides of it. Two men came 'on stage', each carrying two sacks of coconut husks. They piled up the husks to a height of about three feet and then set fire to them, fanning them to create a large blaze. Even from where I was sitting (twelve to fifteen feet away) I could feel the radiant heat of the fire. The men continued fanning until all the husks were burned away, leaving a pile of red hot embers about one foot high and two feet across. The men then left, taking the torches with them, so that the only light came from the glowing embers.

Off stage, the singing started up again and a barefoot boy of about ten years old came on to perform the *sanghyang jaran*. The entranced boy was riding on a sort of hobbyhorse and acted like a horse (*jaran*). After jumping over and dancing around the fire for a few minutes he suddenly ran straight into the pile of still brightly-glowing embers and kicked them all over the ground. He then danced over them in his bare feet to the amazement of the entire audience. After a few minutes the men returned and swept the embers into a pile and fanned them vigorously until they again glowed brightly. The boy repeated the dance. Not once did he hesitate even when stepping on large clumps of embers and, in some cases, he stood still on the embers for up to five seconds. At the end of the dance he sat in one corner and was brought out of his trance by the priest.

The dance was extremely impressive, not only because of the youth of the dancer, but also because of the simple way in which it and the other dances were staged. There was no 'show-biz' element to the performances at all. However the reality of the boy's trance state was not entirely clear, as he seemed to come out of it very quickly, almost before the priest sprinkled the holy water on him.

This was the final act of the show and the audience were invited to have a look at the boy's feet to make sure that he was really barefoot, and to see if he had been burned. The embers were still strewn around the dance area, some of them still in small glowing piles and I decided to test the theories usually invoked to explain firewalking. I bent down and placed my hand on one of the piles of embers and I soon found that if I pressed my hand firmly on the pile and withdrew it

after a second or so I did not get burned. The embers, although initially glowing and therefore at a temperature of hundreds of degrees, went black as soon as I touched them, and while they were very warm to the touch, the sensation only became uncomfortable after a second or so. It was thus possible to move my hand from pile to pile always staying in contact with the embers for a second or less.

This quick experiment seems to support the theory that the answer to the mystery of firewalking lies in the low thermal capacity of the coconut husks. The embers, although very hot, do not contain a great deal of heat energy, and this energy is lost immediately when the ember is put into contact with a cooler object, such as a foot or hand. Because of the latter's larger heat capacity this energy results in a temperature rise which is much smaller than the temperature drop experienced by the ember. Provided the dancer keeps moving there is little danger of getting burned.

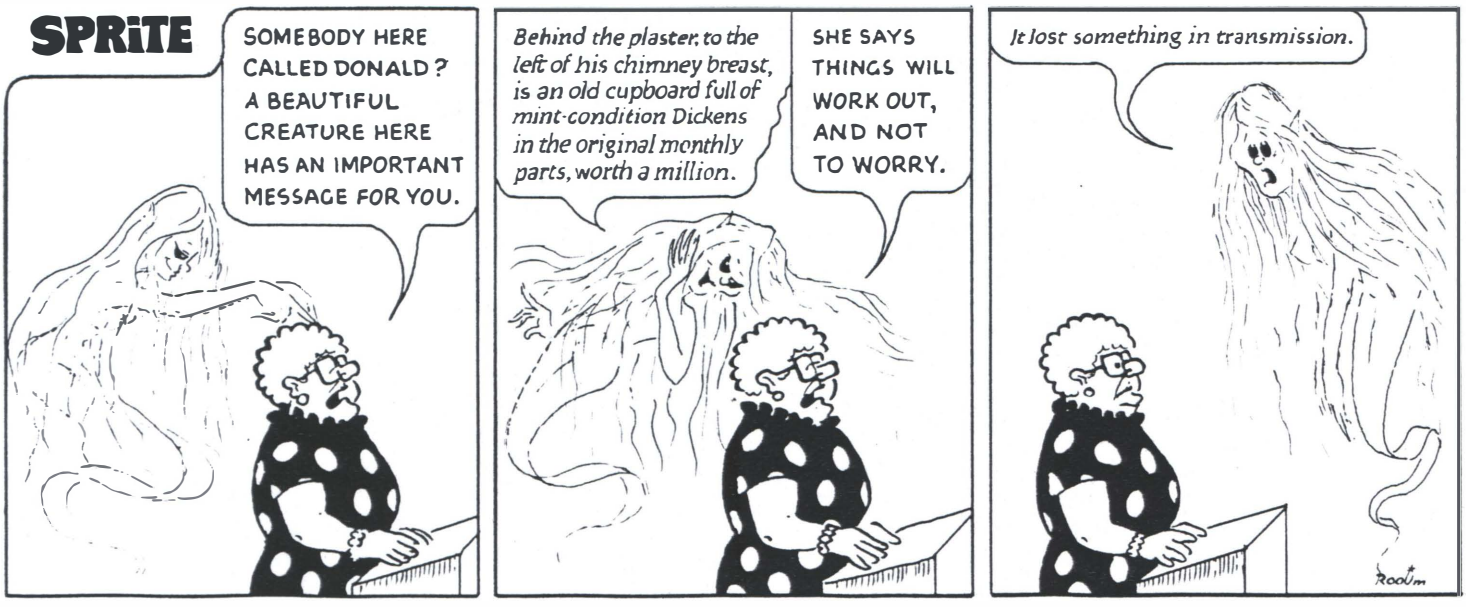
It is not clear whether the apparent trance state plays any important role inthe proceedings. On talking to a number of local people over the following few days, however, all believed that it was done by magic, or so they claimed.

Chris Wright is a research technician at the University of Sheffield.

For a further discussion of firewalking, see the Skeptical Inquirer, Vol. X, No. 1—Eds.

SPRITE

Donald Rooum



Skeptical Calendar

The Sceptic and the Paranormal

A series of evening lectures entitled *The Sceptic and the Paranormal* is to be given at the University of Surrey, by Dr John Lord of the University Library. Topics include the reliability of testimony, the difficulties involved in describing strange events, and the methods we can use in the evaluation of paranormal claims. Examples will be drawn from parapsychology, astrology, UFOlogy, and many other controversial areas. Stress will be laid throughout on the development of critical thinking. There will be five lectures, held each Wednesday from 7 p.m.-9 p.m., starting on 26 April. The fee for the course is £15. For more information, contact the **Department of Educational Studies, Guildford Institute of the University of Surrey, Ward Street, Guildford, GU1 4LH**, or ring Dr Lord on 0483 571281, ext. 2874 (office hours).

London Student Skeptics

All *LSK* meetings will be in the library of **Conway Hall, London** on alternate Mondays starting at 7.15 p.m. The following meetings have been scheduled:

20 February *Near Death Experiences*, Barbara Smoker
6 March *The Evolution Conspiracy*, Glen Mclead, (Chancellor of the Full Gospel Bible Institute of Eston, Saskatchewan, Canada)
20 March *Physics and Irrationalism*, David Wood.

Council Against Health Fraud

The Council Against Health Fraud (CAHF) is an organisation which aims to combat quackery, through the provision of fast access to knowledgeable, expert opinion for media people. In addition, a stimulating quarterly bulletin will be launched in April. The aims of the Council are

- to promote good practices in the assessment and testing of treatments, whether 'orthodox' or 'alternative'.
- to promote consumer protection in all forms of medicine and health care, both by thorough testing of products and procedures, and better regulation of all practitioners.
- to promote better understanding by the public and the media that valid clinical trials are the best way of ensuring public protection.
- to oppose the use of fraudulent treatments, which may be medically dangerous, financially harmful, and prevent patients from receiving the best care.
- to oppose the creation of false diagnoses, which may encourage unnecessary treatments for non-existent diseases.

Have you suffered at the hands of a quack? Have you paid to receive therapy which was useless, or worse? Have you been misled by the claims of 'alternative therapists'? If so, we would like to hear from you. Please write or telephone. Any information given will be treated as strictly confidential.

We are now accepting subscriptions. The rate is £12 per year, with a reduction for students. We think it is time to fight back, to do something about the growing tide of medical misinformation being spread by those who know little about health care.

The Council Against Health Fraud
Box CAHF
London WC1N 3XX
Tel. 01-673 4401

Irish Skeptics Meetings

The *Irish Skeptics* are holding Saturday morning meetings from 11.15–13.00 in the **Georgian Bar, Buswell's Hotel, Dublin** on 25 February and 8 April. Everybody is welcome.

Festival Science et Illusions

The weekend following the European CSICOP conference the *Festival of Science and Illusion* begins in Paris. This is an event not to be missed—it is being billed as 'the first international critical confrontation between science and non-verified beliefs'. The aim of the festival is to confront pseudoscience and beliefs which are held by many to be true but which are generally of an illusory, paranormal or esoteric nature with the scientific, historical and rational information which contradicts them. The festival will consist of exhibition stands, public demonstrations and 'happenings' and debates between the proponents of the paranormal and their skeptical critics.

The Festival will take place from 12–21 May 1989 at the **Espace Glandas, Ivry-sur-Séine** in the southern suburbs of Paris.

Plan ahead for the 1989 CSICOP European Conference

CSICOP's second European conference will be held at the resort of Bad Tölz, near Munich, West Germany from May 5 to 7, 1989. Speakers will include European experts on paranormal and pseudoscientific topics of particular importance in Europe. Members of the CSICOP Executive Council, including James Randi will also be on the program. Translation into English, German, and Spanish will be provided. Topics will include:

1. Fringe Medicine
2. The Philosophy of Pseudoscience
3. Earth Rays and Dowsing
4. Graphology

Call for Speakers

If you would like to deliver an address in your own language on one of the topics above, or another topic relevant to CSICOP, please send your name, address, telephone numbers, vita and the subject of your proposed talk to Amardeo Sarma, G.W.U.P., Postfach 1222, D-6101 Rossdorf, West Germany, before January 15, 1989.

Accommodation

Accommodation details will be sent to all early registrants. The earlier you register the better your chance to obtain accommodation at the conference site. We cannot guarantee accommodation or meal tickets in the Bad Tölz resort for late registrants. Late registrants may have to stay in Munich, 30 miles away.

Randi in Manchester

Transcribed by Frank Koval

James (The Amazing) Randi is a professional magician who for more than thirty years has investigated claims of the paranormal. He is a founding fellow of the Committee for the Scientific Investigation of Claims of the Paranormal, and has written a number of books on his investigations. He has toured extensively, lecturing to university audiences throughout the United States and Canada.

On Friday 21 October Randi was a guest of the Manchester Skeptics and spoke at a public meeting held at the University of Manchester. What follows is an edited transcript of his lecture.

I thought I would begin by explaining to you a little of the terminology that I will be using this evening. You will hear the word skeptic used a great deal tonight. Many people look upon skepticism as a very unhealthy point of view, but we would buy fewer fake gold bricks if we were all a little more skeptical!

But you can only be skeptical to a certain point. Skepticism does not mean that you disbelieve every bit of evidence that comes your way. Suppose that I said that I have a goat in the backyard of my home in Florida. Now, it is a long way to go there, so you could phone up a friend in Florida and ask them to look in my backyard and phone back to tell you whether or not I have a goat there. You would not need a great deal of proof in this case. You do not need to be highly skeptical of the claim especially as I do not seem to have anything to gain by claiming that I have a goat in my backyard. But, if I say that I have a unicorn in my backyard, then we have a very different problem! First of all, experts in unicorns are very hard to come by! Secondly, if you sent somebody around to look in the backyard, he may well say it looks like a small horse with a horn coming out of its forehead. Now I would want a piece of that horn! I would want more proof than someone just looking over the fence and saying, 'Oh yes, that's a unicorn', because for such an unusual claim we need very strong evidence.

We all have to be wary of making too many assumptions in our lives. Many people sitting here tonight are looking around smugly thinking, 'Oh, I don't make too many assumptions,' but we all make assumptions every moment of our lives. Suppose that you are walking along in the street and come to a traffic light. You look up and see that it is on red. You know the rules and wait until it is on green and then assume that you will have time to cross the street without being run flat by the traffic. You make that assumption based on the knowledge of the traffic system and your past experience of timing in getting across the street. Such assumptions are necessary in everyday life; if we did not make them we would become catatonic. But there are assumptions we make based on trust in such things as the media, books, films and television programmes. That trust can sometimes be misplaced. You know the expression that they would not print it if it were not true. But that expression itself is not true.

As a matter of fact, ladies and gentlemen, you have all being making an assumption while you have been sitting there. At the beginning, Toby Howard stepped up to this lectern to introduce me and you heard his amplified voice somewhat booming. [*Then, Randi moved away from the microphone on the lectern, traced the cable back to where it should have been plugged in, and waved the plug in the air. The microphone was not connected! F.K.*] You see, you all made a basic assumption. You assumed that I was using that microphone. [*In fact, Randi then showed that he had been using a lapel microphone but that he had fixed it on the inside of his coat, and that explained the rather muffled sound we were straining to hear. Of course, it worked perfectly well when it was clipped on the outside of his lapel. We were very much relieved! F.K.*] It was a very simple assumption. It was quite harmless and did not cost you anything. But there are other assumptions that you can make in your life if you are not skeptical enough that can cost you a great deal; indeed they could cost you everything.

Some people label me as a debunker, but I do not

accept that. That would mean that I would have the luxury of walking into a situation and making a pronouncement even before looking at the facts with the attitude, 'I know it is not so and I am going to prove that it is not so.' That would be a very biased way of looking at any situation. No, I am an investigator and I try to go into an investigation with an open mind. Well, I say I try, but I am not going to deceive you any more than I deceive myself. In fact I do not have a totally open mind when I look into such things. The reason is that I have been at it now for more than forty years and in that time I have never seen a single example of a paranormal, occult or supernatural event that I have not been able to come up with a rational explanation for. That is, when I have been able to get close enough to them.

I carry around in my pocket at all times, and available for inspection, a cheque for $10,000 that I made out 24 years ago on a radio programme in New York City when a parapsychologist asked me to put my money where my mouth is. I did this a little irrationally because I did not necessarily have $10,000 to wave around at risk, but it has been gathering interest in the bank ever since. It is available to anyone who can prove their paranormal claims. That does not include people who say they can read minds, assuming that I would just believe them.

That reminds me of the story of the man who was taken to court accused of murder. Eighteen people saw him shoot a man in the street and there were photographs and video tapes of it. The appeal for mercy after he was found guilty included, 'Your honour, they only produced eighteen people who saw me do it. I can produce 500 people who did not see me do it.' That is not the same as seeing him not do it. You cannot prove a negative. When I am called into an investigation, people often ask me if I can prove some phenomenon is false. I say that I cannot, but it is up to them to prove that it is true.

I would like to share with you a few of the experiences I have had in my travels around the world. One of them was a trip that I recently made to China. I was invited there along with a few of the other members of the Committee for the Scientific Investigation of Claims of the Paranormal. This organization has become respected throughout the world for looking into such claims. The Chinese government invited us over there because the popular press there had reported that some children were said to be able to read Chinese characters written on small pieces of paper and folded up very small. They read these pieces of paper with their armpits! Now I am no physiologist, but I do not think the optic nerve goes that far. I would also be interested in the focusing device.

One little lady had a particular talent. Not only could she read with her armpit, but she could also read the little piece of paper when it was stuck in her ear! I suppose the ear is not that far from the eye. But then, she could also read the papers if she sat on them. Remarkable claims! Now, how did these people go about reading the pieces of paper with their armpits? We have to remember that kids can be clever! The papers were prepared in large numbers and folded up for the children to choose one. If I were conducting the experiment, I would use just one paper at a time. However, the kids would take a paper each, place it in the armpit and go and sit down. After a while, one of them would ask to leave the room. He would leave his paper behind—and this could be checked; it would be the right one. Later, the child would return, take back his paper and sit down again.

What really happened was that the children sat in a row with their arms folded. This meant that any one of them could use his fingers to remove the paper from the armpit of the child next to him. He could then go out of the room, read it secretly and return. Then, he would pass the paper back to the other child's armpit and secretly tell him what he had read. In the cases of the pieces of paper in the ears, the children simply took more than one piece of paper. One went in the ear and the other was used for secret reading. At a suitable point, the paper which had been read could be switched for the one in the ear. It is an old technique used by spiritualists.

Now there is a gentleman now living in the UK—his name is Uri Geller—you might have heard of him. He is a conjurer from Israel who came to the United States. He could do wonderful things like breaking and bending spoons by just looking at them, reading the contents of sealed envelopes and a number of other tricks that I remember reading on the backs of cereal boxes when I was a kid. [*Randi then proceeded to demonstrate very effectively how he could bend and break borrowed spoons with minimal contact while they were being held at each end by a member of the audience. F.K.*] Such tricks are very easy to do but many people including scientists may be fooled by them as do not know how they are done or are not looking for them.

[*Randi's next demonstration involved the use of a spectator's wrist watch. The time shown on the watch was noted and it was placed face down on the spectator's hand. In due course, when the watch was examined again, the time was seen to have changed by some 45 minutes. Randi demonstrated how, with suitable misdirection, he had been able to twist the winder in the action of turning the watch face down. F.K.*] Any watchmaker will tell you that almost every clock or watch that is taken out of a drawer where it has been left for years will start to tick and work again because the balance wheel will start to work again.

Mr Geller used to say when taking part in radio and T.V. programmes, 'If you have a watch which is not running, bring it to the television set. If it begins to run, call the station.' Notice that he does not say that they should ring the station and tell them whether or not the watch is running. Then, he says, 'I told you to bring broken watches to the radio or

television set.' Note that he has now changed the emphasis and given a different impression of what he is doing. Anyway, the result is that the switchboards are always jammed. The problem with Uri Geller is that he cannot perform his miracles under properly controlled test conditions.

Again, back in China, a parapsychologist there put broken matches into sealed boxes and gave these to 'gifted subjects'. He later found that when the boxes were opened again that, lo and behold, the matches had been restored. We tried some of the tests and, when the subjects returned the boxes, and we took off the Scotch tape, on it we found pieces of straight black hair, bits of grass and grass seeds. The parapsychologist said that this was part of the miracle! Quite often, he found, foreign objects appeared under the tape. Not only that but, when we opened the box, the match had been restored. The broken matches originally placed in the sealed boxes all had green heads, but the restored match had a red head. But, did that worry the parapsychologist? No! Never abandon a theory. Instead, throw out the facts when they do not fit! He said that not only had the match been restored, but it had changed its colour as well!

In Australia, a channeller says that she can channel the spirit of Rampa. Can we prove that this is wrong? No! No-one can prove a negative, but she can fill a theatre and vast numbers of people are prepared to pay $A600 to see it. She visited Australia for less than 48 hours on a tourist's visa and came away with a suitcase containing $A225,000. She got that from charging $A600 a seat and filled the hall. Some of the audience came from as far away as Indonesia. About two weeks after that, a gentleman named Carlos appeared at the Sydney Opera House. Carlos is an artist of Spanish origin from the United States whose original name was Jose. He attracted a substantial crowd who were prepared to pay $A20,000 for a crystal which supposedly came from Atlantis. I was there that evening and the only difference between the two channellers was that she made about $A225,000 whereas Carlos made nothing because he is in fact my close associate. I had received a call from the *60 Minute* programme in Australia and they asked me about these channellers. They asked what could be done given it is not possible to prove a negative. I replied that we could create a channeller for them. I decided to use Jose and we spent about two weeks preparing for the performance and eventually Carlos appeared at the Sydney Opera House where he proved the point that anyone with the right preparation could have the same effect.

Some years ago, a young man called Ted Serios, a bell-hop in a Chicago hotel, claimed that he had the ability to pick up a Polaroid camera, put a small tube made out of black paper around the lens, and take psychic photographs. He would focus the camera to infinity and aim it at his head. When the film was developed, there would be a picture on it of something that was not even in the room. In fact he was using a small piece of photographic slide which he secretly held in front of the camera lens. He was investigated by psychiatrist Jules Eisenbud who claimed in a book that Ted had psychic powers. On one occasion, he asked Ted to produce a picture of the submarine Thresher which was in the news at the time as it had been lost at sea with the lives of all those aboard. It turned out that the picture Ted produced was of Queen Elizabeth II of England. But, Jules Eisenbud saw a connection between the two. He reasoned that, in Latin, The Queen is referred to as Elizabeth Regina. The last two letters of Elizabeth and the first two letters of Regina give us THRE, which are the first four letters of THRESHER! Now, what about the last four letters, SHER? Well, the Queen is a sort of mother figure for many people. The French for mother is *la mère*, and submarines operate in the sea. The French for the sea is *la mer*. That leads us to Ted's mother, whose name turns out to be Esther, which contains (amongst others) the letters SHER! Now, how can you deny logic like that!

For the last few years I have been investigating what is, quite frankly, a racket. Religious broadcasting is on television in the United States for 24 hours a day, seven days a week. You will be able to see fakers who but an hour or half an hour of time. Peter Popoff is one who goes around the audience of his show, walks up to somebody in a wheelchair and addresses him as Bill. 'Yes,' comes the reply, 'my name is Bill.' After assurances that the two have not met or spoken to each other, Popoff says, 'Now stand up and walk. Dr Jesus has healed you. Praise the Lord.' The man gets up and is able to walk. Now, how was this done? What viewers do not know is that two hours before the performance, Mrs Popoff went down into the audience. She saw Bill walking around and told him to sit in a wheelchair so that the Rev. Popoff would know that he needed healing. As she was talking to Bill, the discussion was being relayed to Peter Popoff who was making notes. During the performance, Mrs Popoff is up in the booth watching a television monitor showing the proceedings and relaying information to her husband by radio. He has a tiny radio receiver in his ear.

Faith-healing is a racket; it is the most disgusting thing I have ever come across. In the lobby outside the studio, we found people ill and even dying. In some cases people had actually sustained injuries when they had run to the stage, the temporary rush of adrenalin anaesthetizing the pain. Reverend Popoff and his wife were raking in over $1 million every month, tax-free. They had been doing that for several years. After my exposure of him on the Johnny Carson Show, he was bankrupted.

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Complacently Irrational? Or Irrationally Complacent?

David Fisher

Some fallacies exposed

No question is ever settled, until it is settled right
— Ella Wheeler Wilcox

Prelude

Before reading on, and for reasons which will become apparent later, the reader is invited to have a go at answering the very simple science-based questions illustrated below. If the reader has forgotten all that he ever knew about such matters, he is free to consult any textbooks which he has available, or to work the answers out by using common sense.

Naught For Your Comfort

The main title of this article might normally be expected to presage a rather smug attack upon the lunatic fringe, of the type which encourages the reader to sit back and mentally put his feet up in the pleasant anticipation of having his favourite paranormal or pseudoscientific victim routinely pilloried yet again.

The article itself will therefore be a distinct disappointment in that it is the average sceptic who is here going to have his belief system shaken. The reason for this seemingly strange departure from the usual content of sceptical items is that there is a detectable tendency of some sceptics to decide a priori what is true and what is false. This trend must be opposed, because the sight of a smug so-called sceptic blindly

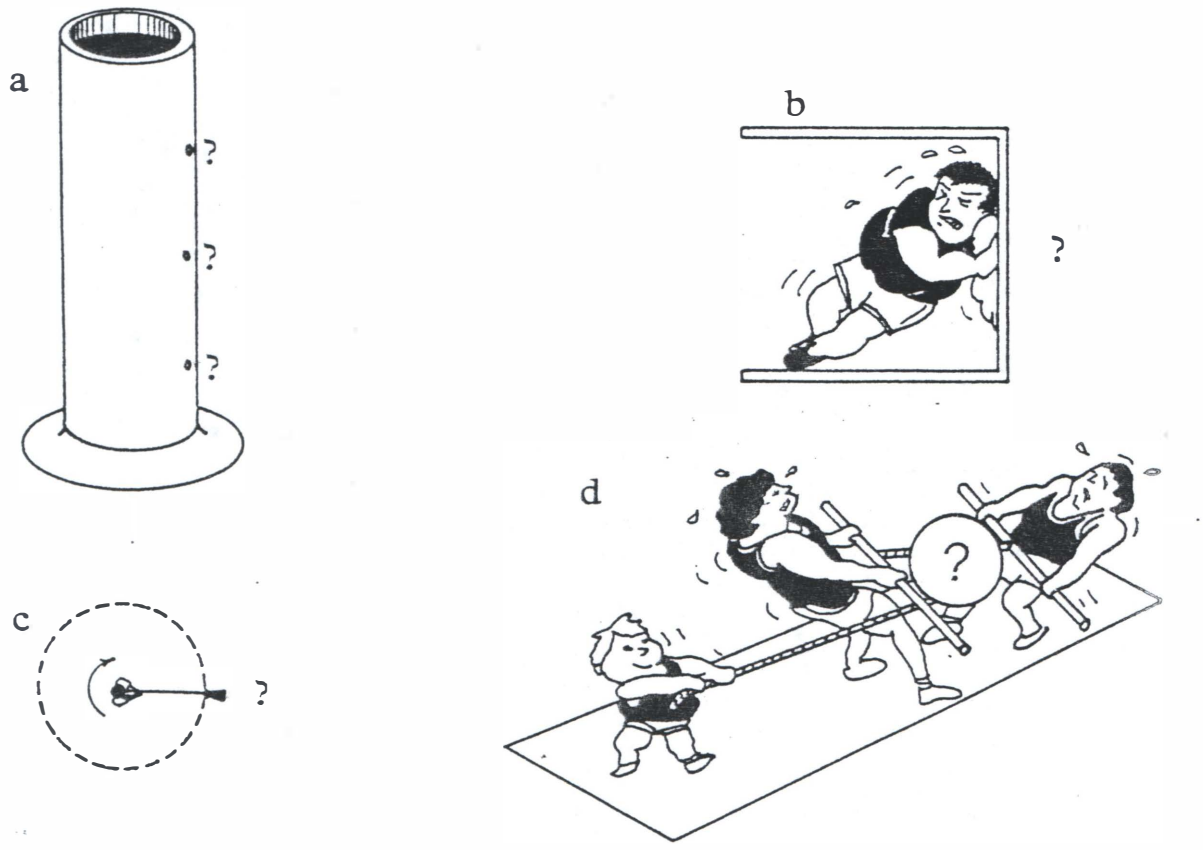

Figure 1: The Sceptics' Touchstone—Straightforward Science

a) A cylinder with a constant head of water and three holes. Sketch in the path which would be followed by the water spouting from each hole. b) A man is within, and steadily pushing at, the wall of a rigid box—can he push it forward in this manner? c) A bird's eye view of someone whirling a weight—draw an arrow in the direction of the centrifugal force acting on the weight and then draw an arrow to indicate the path that the weights will follow if the string breaks. d) Can any arrangement of pulleys permit the small boy to overcome the strength of the two strongmen?

brandishing an unquestioned 'fact' should be considered as equally offensive as a religious zealot mindlessly waving his holy writings.

At this point many sceptics will protest that they always muster scientifically proven or obviously true facts in order to counter irrationality. But, are they really sure that the data have trickled down unpolluted to them from the ivory towers? Are they really sure that the 'obvious facts' are really so axiomatic? More generally, would they feel free to scoff at the (perhaps unique) irrational belief of an opponent if they discovered that their own well of knowledge was a morass of received nonsense? It is this theme which will be explored here.

Pseudoscientific notions are often referred to as 'pathological science', implying some form of illness. Since the incorrect ideas to be discussed here seem to spread like the plague, one might also use medical nomenclature to describe them.

The Orson Welles Syndrome

This is a mild infection and will only worry the most sensitive pedant. It is named for the genius who insisted on inserting his own monologue into the screenplay for the Vienna Ferris wheel scene in *The Third Man*. The sonorously intoned soliloquy informed us that cuckoo clocks originated in Switzerland.

Such mistakes are in themselves trivial and are as well known as the common poetical mis-quotes—'all that glitters', 'to gild the lily', 'fresh fields and pastures new', etc. It is simply unfortunate that one starts to wonder what other data the speaker has distorted. Newspapers often court queries concerning their accuracy (no names, no pack drill). This tendency is covered by what is known as Knoll's Law of Media Accuracy, which states that 'everything you read in newspapers is absolutely true—except for that rare story of which you happen to have first-hand knowledge'. For instance, the writer's local newspaper once informed him that 'Pakistan had sent agents around the world in order to buy super-tough beryllium, a steel . . . '. Beryllium is not a super-tough steel; it is a notoriously brittle metallic element. The same newspaper also informed him that the local 'hands-on' science centre had a power-unit which 'wastes nothing as it does its job'. This, if true, would contradict the second law of thermodynamics.

The other media fare no better. One has only to recall the evening when ITN devoted an entire bulletin to a sharp criticism of the safety record of DC9 aircraft 'like the one which has crashed on the M1'. In fact, it was a Boeing 737; but for a while it was the closest thing to non-identified flying object that one is ever likely to see. Other bulletins solemnly reported the Listeria virus to be a cause of serious food poisoning (Listeria is a bacterium).

It is interesting to note in passing that the search for Salmonella bacterium (or sometimes virus) in eggs had already become analogous to, and as fruitless as, the search for 'psi' in humans. This should give the true sceptic pause for thought.

One can obviously afford to be charitable about such gaffes. When the 1980 edition of the *Guinness Book of Records* told readers that 'the highest prime number is 2^{21701}', one could smile twice in amusement. When Professor Richard Hoggart said, of an interpersonal relationship, that 'it was a case of two overlapping parallel lines', one could generously ascribe the oxymoron to poetic licence; and when *The Times* advised motorists not to accelerate from a standstill, most car-owners probably agreed without question that this was unwise and strove manfully to move off without moving faster. These same motorists probably made sense of the contemporaneous Volvo advertisement which enthused, 'we even use twin fan belts to halve the risk of being caught with a broken one.'

Less easy to forgive are distortions of serious issues. If there were to be a reactor meltdown, does anybody really believe that the core could 'eat' right through the Earth? Is the 'China Syndrome' concept just a bit of journalistic whimsy or does it reflect an incredible ignorance of basic physics? It is certainly hard to feel generous towards the following masterly analysis of nuclear safety by the influential American pundit, William F. Buckley:[1] 'The Rasmussen report estimates that there will be one meltdown every 20000 reactor-years, and one fatality from cancer every 50 reactor-years. Conjoin those data (20000 divided by 50) and you get the figure of 400 deaths a year.' Should the last figure be brought up at the Hinckley Point enquiry?

The Trivial Pursuit Syndrome

This is named for the game whose inventors seem to wish irrevocably to disrupt family life by including a significant proportion of wrong answers among its cards (Q. *How would one write 49 in Roman numerals?* A. *IL*).

One can largely eliminate the misguided statements of the previous section from serious consideration by sceptics because, although some of them might cause apoplexy among pedants and unnecessary panic in certain quarters, they are errors which common sense or a textbook would quickly reveal. The greater, and largely unrecognised danger, is that the textbook may well be wrong. Not just the one that happens to be consulted, but every textbook—and not wrong only about subjects on the very frontiers of knowledge, but wrong about things which should have been 'firmly nailed down' many years before.

Of course, for most people 'the buck stops there'. If one shows them a nicely printed statement in a textbook, they will accept it, repeat it, act on it, perhaps base an 'informed' TV programme on it; even die for it. But rarely will they question it, unless a contradictory statement is to be found elsewhere. The whole ethos of CSICOP is, of course, to provide

Brain of Mastermind Krypton Factor Quiz

1) Where did many people die in a 'black hole'? 2) Who first coined the term 'Iron Curtain'? 3) Who invented the device that Mme DeFarge watched while knitting? 4) Who was its first victim? 5) Who wore a coat of many colours? 6) What animal is known to commit suicide? 7) Who confessed to cutting down a cherry tree? 8) Who said movingly, 'E pur si muove'? 9) What Papal relative poisoned her enemies? 10) Who knighted beef?

Answers

Many years of expensive education or listening to quiz programmes will have taught the reader that the correct answers are: 1) Calcutta, 2) Churchill, 3) Dr Guillotine, 4) Dr Guillotine, 5) Joseph, 6) The lemming, 7) Washington, 8) Galileo, 9) Lucrezia Borgia, 10) James I. Unfortunately, these are *not* the correct answers. The replies with the best factual support are 1) Not Calcutta, the story was fabrication, 2) St Vincent Troutbridge, 3) Dr Antonin Louis, 4) Pelletier the highwayman, 5) Not Joseph. No original biblical sources mention any such garment, 6) Not lemmings. No record action of these animals can be seriously interpreted as suicide. 7) Not Washington. It is another fabrication, 8) Not Galileo. It is yet another fabrication, 9) Not Lucrezia. She was vain and silly, but not murderous. 10) Not James I. The term 'sirloin' (Sir Loin) is a corruption of an old French word and dates from at least the reign of Henry VI.

such dissenting (and we like to think) more firmly based opinions. The point which will be made at some length here is that a true sceptic should not take either baseless claims or 'known facts' on board without first engaging his own brain. However, an individual's mental apparatus reflects his educational environment in much the same way that the trace elements in a plant reflect its chemical environment. Can any sceptic be sure that he has not somehow picked up a harmful percentage of worthless information? How can he check?

Well, the 'quiz' is a popular means of testing one's knowledge and of ensuring that it reaches the norm. Indeed, society offers many rewards merely for being able to exceed the norm; especially when the quiz happens to be called an examination. So, the reader is invited to subject himself to a quick 'Brain of Mastermind Krypton Factor (without the SAS bit)' quiz (see box)—an encyclopædia can be consulted.

It would be a safe bet that, at this moment, any number of excuses are flitting through the minds of those readers who failed this test dismally. The excuses might well be of the form; 'Well, it might not have happened on that occasion or in that way or to that person, but I am sure that such a thing might well have happened sometime to someone', 'That is a matter of interpretation, opinion, definition', 'It might have been a joke', 'Well, such questions are not really about absolute truth, are they? They are about society's view of the truth', 'How do *you* know? Where is the proof?', 'I do not believe *everybody* can be wrong', 'I shall stick to my version, anyway', and so on and so on. Where on earth have we heard these statements before?

Of course! We have heard them from every apologist for every disproved paranormal phenomenon, every debunked pseudoscientific theory, and every unmasked fraud from Alexander of Abonutichus to you-know-who.

The interesting things to note are that a) those who now demand proof never required such proof from the *original* source of their misconception, b) they take refuge in the mere fact that others acquired the same wrong idea in an equally uncritical fashion, and c) they are obviously likely to continue to disseminate the incorrect version simply because of various societal pressures. Not least of these is the fact that they would still lack concrete evidence to support the correct answer and would thus have to be pretty authoritative about it. A lack of the necessary resolve is betrayed by the more 'up-market' quiz shows which cover themselves by prefixing some questions with 'Of whom is it said ...?'

The Tomorrow's World Syndrome

This is named for all of those popular science programmes which are likely to present any topic beautifully, but without ever asking whether the basic information is entirely correct.

The problem of authoritative sources is always a prickly one. Few people have the time or inclination to go searching through obscure texts in remote locations and must therefore put their trust in those who do have the time. This trust is usually well-placed, but can easily be abused and thus give rise to those well-known and widely-read books on ancient astronauts in Peru, levitating monks in Tibet, and handy surgeons in the Philippines. For this reason, many of those who like to be sure of their facts are drawn to science. Here, the only authorities should be the data. These, in principle, can always be reproduced at will in order to silence a dissenter.

Because of the greater immediacy, universality,

and importance of scientific beliefs, one cannot allow scientific misconceptions to enjoy the same benefit of doubt which one might extend to the wrong answers in the above quiz. Indeed, real dangers arise when the scientific basis for doing something is forgotten and only the habit remains, like the smile on the Cheshire cat. Thus, innumerable innocent victims have died because some DIY enthusiast extended the lighting circuit and put the light-switch in the neutral line of the extension. Call an electrician? Diagrams which encourage the above lunacy, as well as that of putting the *fuse* in the neutral line[2], have been found in handbooks and textbooks. Of course, if one was in doubt one could 'play safe' and put a fuse in both lines, couldn't one?[3]

Myths In the Making

Is the reader entirely free of irrational and baseless 'scientific' beliefs? It is baffling, rather than worrying, why many people put reflective insulating sheets behind central-heating 'radiators' (*convection* heaters). Perhaps some appreciable fraction of radiated heat *would* otherwise wastefully heat the wall. The real puzzle is why they continue to cover the radiator itself with fashionable white gloss paint (a bad absorber is a bad emitter). Matt black paint would ensure optimum radiation into the room.

Also, why do motorists put little rubber strips on their cars? Leaving aside the question of whether static charges cause travel sickness, a car is effectively a Faraday cage. One would not expect to find any wind-generated charge inside. Note, one does not even see static discharges leaping from these strips when driving at night, even though a humble nylon shirt can deliver quite a fat spark and a nasty jolt.

On the subject of discharges, how many readers possess an ion-generator?

Finally, why does the real Hi-Fi enthusiast use 13A plugs which have gold-plated pins? Is audio design a science or witchcraft, as others have asked?[4]

The present writer has been unable to trace any double-blind experiments which test the above anomalous claims. One must conclude, as true sceptics, that there is little to choose between the above myths and interdictions on the exposure of cutlery when lightning is about. Old wives say that this is dangerous (because of some vague notion about electrical conduction), but are curiously silent on the subject of switches and fuses.

A Suitable Case for Treatment

What about the most clear-cut scientific facts? When putting forward (as a sceptic) what 'science knows', there is a strange temptation to imagine that one is *au fait* with scientific truths via some sort of osmotic process. That arch-critic of CSICOP, Professor Harry Collins, makes the valid point[5] that those scientists who work at the very limits of their subject are usually the least certain about what is known. The present writer would add that, even if a concept is accepted, it is relayed to the general public with all the fidelity of a game of 'Chinese Whispers'.

Let us see whether the average sceptic can evaluate received scientific knowledge in a questioning fashion. Yes, it is time for the reader to reconsider his answers to the questions which were posed at the beginning of this article.

Anyone who drew the three spouts in Figure 1a so that the one from the middle hole struck the ground farthest from the base of the cylinder deserves some sort of prize. For he has overcome the malign influence of every textbook and lazy time-serving teacher since at least 1914. An influential physics handbook of that time[6] drew the spouts so that they hit the ground at steadily increasing distances from the base, and this error has been propagated ever since. It may appear to be a very trivial error; but it is not, and deserves some excruciating dissection. Think for a moment of the enormity of what it implies. Think of the generation of dedicated teachers who have lived and died for their 'vocation' without ever correcting the mistake; think of the mouldering piles of journals devoted to 'science education' which never pointed it out; think of the professors who have held chairs in 'science education' and have never rectified it. Go to your local bookshop and see what a selection of the latest GCSE textbooks have to say about it. Above all, think about this example when you next hear Kenneth Baker MP talking about 'value-for-money education' and 'quality teachers'.

Reflect also upon what it implies about the reader's received knowledge of how things really behave and his scepticism regarding received ideas. If such an easily testable fallacy can survive for so long, how can the reader be sure of anything that he has ever been told? One begins to understand why the general public are such easy prey to pseudoscientific claims. One even starts to have sympathy for those earnest pseudoscientists who complain about the blinkered smugness of sceptics.

The most annoying thing about the incorrect diagram is that it is quite clearly wrong, simply by 'inspection'. Consider the lowest possible hole which could be made. Does the reader's common sense really tell him that this spout would shoot out farther than the others; even if there was only one millimetre between it and the ground? Does no-one look critically at the diagram? The head of one Sixth-Form College appeared to have tried to correct it in his GCSE textbook. Sadly, an exchange of letters with Dr A revealed that his 'corrected' diagram was also wrong. Even worse, he believed that the initial velocity of a spout was proportional to the depth of the hole below the water surface. This is a real 'schoolboy howler'. The initial velocity is always zero, of course. it is the horizontal acceleration which increases with depth. Meanwhile, the time available for the 'flight' decreases to zero. It is obvious that some intermediate

optimum combination of height and acceleration must exist. Can one trust such people to investigate properly apparently anomalous phenomena which involve complex interactions of conventional physical effects?

Why has straightforward repetition of the experiment not revealed the error? Well, the present author was told by one teacher that, when he (a chemistry teacher) had been asked to take a physics class, he had given the pupils this experiment to do in order to keep them busy. One pupil persistently complained that there was just not 'enough-room' for the lowest spout to go in very far (see above). The teacher refused to listen and told him that he must be doing the experiment wrongly. So much for reproducibility! Could one not mischievously suggest that certain experiments on borderline topics are perhaps being checked by sceptics who have similarly impressive willingness to accept unexpected results?

Further Historical Perspectives

The above is not the only example of an incredibly long-lived fallacy in elementary science, but it is the most blatant one that is known to the writer. There are others which are just as long-lived but are far too obvious and have to re-emerge from time to time in more subtle disguises.

Even in 1913[7] no-one really thought that a man in a rigid box (Figure 1b) could push it smoothly forward. Therefore, it is hard to believe that a physically equivalent statement has appeared in *New Scientist* during the past few years.[8] Rocket-type fireworks were under discussion, and it was asserted that it was not the rocket exhaust which propelled a rocket forward, but the pressure of the gases on the closed end of the rocket. Things have obviously moved forward briskly since the time (1920) when the editor of the *New York Times* said that rockets could not operate in a vacuum because there was nothing for the exhaust gases to push against.[9] Newton must positively revolve in his grave.

A fallacy which still had to be corrected in 1907 was that if two men pull at each end of a rope with a force of 100lb, then the stress in the rope is 200lb[10]. In fact, the stress is 100lb, of course. Referring back to figure 1b, one sees that the little boy indeed cannot overcome the strength of the *two* strongmen because one of them is supernumerary. That is, he could be replaced by a hook in a wall without changing the situation. Question: where has this fallacy reappeared? Answer: in the GCSE physics textbook which was supplied to the writer's son.[11]

Some subjects seem to demand that a fallacy be associated with them, even if the fallacy is different in different generations. Thus, it used to be thought that someone falling from a great height would be killed by the fall itself and would be dead before he hit the ground[10]. This fallacy could not survive modern education (of course?). On the other hand, the *Guinness Book of Records* has always listed the longest fall survived without a parachute. The fallacious implication here is that it is somehow more miraculous to survive a 5000ft fall than a 1500ft fall, even though the same terminal velocity would be attained in both cases (due to air resistance).

The Road Goes Ever On

Some fallacies are not mentioned in older compilations because they were probably not recognised as such at the time. The most well-known of these fallacies was probably revealed by the reader's answer to question 1c. The 'textbook' answer would show the centrifugal force as an outwardly pointing arrow. The path of the weight when released would be represented by an arrow which is tangential to the circle. The problem is that there is no such thing as a 'centrifugal' force in Newtonian mechanics. Because of this common misconception, many students reson wrongly (using Newton's second law) that the weight will fly radially outwards.

The latter scientific misconception is just one of many. Indeed it has been pointed out that a very large percentage of new undergraduates (who have already surmounted earlier academic hurdles) hold views of physical phenomena which are literally medieval. They often believe, for instance, that momentum is a quantity which is used up like rocket fuel until a projectile exhausts it, whereupon the projectile just drops vertically out of the sky. Others sincerely believe that they can always (i.e., even in the absence of friction) roll a ball so that it follows a curved path. Snooker and bowling obviously have a lot to answer for.

In order to justify the implied criticism of the *Tomorrow's World* programme, consider their stock explanation of flight. When necessary, the presenters always fall back on the simplistic idea that lift is caused just by the difference in path lengths above and below the aerofoil. There is something obviously amiss with this explanation, because aeroplanes can fly upside down and a perfectly symmetrical aerofoil (with equal path lengths) also works. Presenters may even mumble something about Bernoulli's Law. It is not applicable to an aerofoil.

Other fallacies which they perpetuate when the opportunity is offered are that one can skate on ice because the blade's pressure melts a thin film of water, and that water freezes at 0°C.

Finally, the integrity of the teaching profession ensures that fallacies will always have a good chance of survival. One professor of chemistry has admitted that he did not really learn the subject until he had to teach it.[12] A mathematician has reported that, when an examination was misprinted, the board of examiners stated in writing that the modified equation was 'impossible' to solve. A solution was, in fact quite easy to find.[13] Incidentally, just in case the more mathematically minded reader thinks that there are no common fallacies in this subject, he should recall

the often-held beliefs that general equations of the fifth degree or higher cannot be solved analytically (hint: use elliptic integrals), or that there can be no functions which generate only prime numbers (they exist but are not very useful).

Back to the Future

The reason for the above concentration of attention upon examples involving forces is that some of the most convincing 'tricks' played on the gullible down the ages depend upon an inability to evaluate simple physical phenomena. The most famous example is the parlour game of lifting a fairly heavy person by using five finger tips. According to his diary, Samuel Pepys thought that it was mysterious. It is amazing that it survives as a mystical phenomenon: Joseph Dunninger included it (as a trick) in his encyclopædia of magic of 1896 and yet, in a book published in 1984, it is still presented as an a example of levitation and receives Colin Wilson's stamp of approval.[18] It has recently been seen on Channel Four's *Network 7* programme (for well-informed young adults).

Before continuing, it is worth pausing awhile in order to take stock. It has been shown that everyday misguided statements which so irritate the pedant are just the tip of a very large iceberg, and that the sort of knowledge whose possession passes for education cannot be depended upon. Just because a person holds a degree in Arts or Sciences, his opinion is not necessarily gospel.

Mentally, some readers may still be fighting a rear-guard action. After all, in the above examples the 'real' answer was known to somebody, or could be found by a more careful examination of the phenomenon. Is the writer not simply picking on second-rate opinion? Would not the opinion of the leading scientists of the day be the true acid test?

The End of Physics

A common unfounded assumption among some sceptics is that *everything* is known about the simplest apparatus and that there is nothing else to be found. One imagines that because Archimedes had very limited apparatus and quite a lot of time to spare he must have found out every single thing about simple systems. Even if Archimedes did not find everything, surely da Vinci would have found it, or Newton, or Hooke. Of course, they did not discover relativity—but that is a different matter. Surely one could not find a new, easily demonstrated phenomenon which these earlier 'state of the art' scientists might well have seen. Well, they did not discover the 'Hannay phase'. This is a rather strange counter-intuitive change in the plane of a vibrating reed which occurs when it is part of a rotating system. It is something whose discovery was well within the experimental grasp of the ancient Greeks.

Einstein and ESP

Einstein is said to have made the rather neutral comment that, if ESP existed, it certainly did not appear to obey an inverse-square dependence on distance. Although this is not a particularly damning opinion, it certainly gives the impression that a *sine qua non* of a 'real phenomenon' would be that it obeyed such a distance dependence. Textbooks certainly give the impression that this is an essential feature of any radiative source. However, it has recently been shown theoretically[15] that a transiently excited uniform sphere can emit beam-like signals which may weaken much more slowly that the inverse square law would predict. So, perhaps, ESP is difficult to detect merely because it is transient and the 'signal' may be coming vertically out of the top of the sender's head. The sceptic really must strive to avoid knee-jerk reactions and conclusions which are perhaps based on insufficient information.

Conclusion

It has been shown, at least to the writer's satisfaction, that absolutely no source of information should be blindly followed. Of course, doubting everything all of the time would make the transfer of any sort of rational concept extremely difficult. There is simply not enough time to dot every 'i' and cross every 't', and even if every hard fact was to be nailed down once and for all, one would still have to keep track of any new information which might change the honest sceptic's opinion. One could argue that there is a need for a new verb which describes an attitude which is somewhere between proof and belief. After all, the sceptic should not say that science has 'proved' something since science never pretends to do that. On the other hand, if one says that science 'believes', then it is difficult to distinguish this belief from, say, religious belief.

Friday 13th

The sceptic must also pay some attention to the way in which peculiar beliefs have arisen. From one point of view they may be entirely rational. If the present writer is asked if the Friday 13th superstition is stupid, he would say 'yes'. If he is asked whether it is completely stupid, he would say 'no'. If someone lists all of the bad events which have occurred on Fridays and then compares the totals for Friday 13ths with the 'null hypothesis' that the probability is equal for every Friday, he may find a significant bias towards bad events happening on Friday 13th. This would occur because he may not have realised that Friday 13ths happen to be significantly more frequent[16]. The correct manner of analysing the data would be to compare equivalent days in succeeding years—some of which were Friday 13th and some of which were not. However, the fact remains that this often unsuspected preponderance of Friday 13ths may have been unconsciously noted by the human brain.

Rat Kings

One question which is not often asked is whether there

are any strange phenomena which sceptics have accepted without demur while 'believers' are still deep in doubt. Experienced sceptics will know that self-doubt is not exactly a prominent sentiment in books of the *World Mysteries* ilk. Nevertheless, on the subject of rat kings (groups of rats with hopelessly tangled tails), some 'marginal' books are curiously sceptical. The most recent rat king which *Living Wonders* (1982) could find dated from 1907.[17] Strangely, also in 1982, photographs and X-rays of a rat king appeared in the *Sunday Times*.[18]

The Biter Bit?

The well-read reader will have spotted that some of the above examples have been lifted from collections of fallacies such as Philip Ward's *A Dictionary of Common Fallacies*. Can such compilations be trusted? The answer is a resounding 'No'. In Ward's collection, scorn is poured on the old farmer's tale that 'stones grow in fields'. It is suggested that the plough simply 'misses some stones each year'. A very unconvincing scenario. In fact, the farmer's explanation is closer to the truth. Stones are carried up from the bedrock by a phenomenon known as *frost heaving*.[19]

Has the writer never made some silly unfounded assumptions himself? Probably. He certainly had a close call in that it was his intention in this article to make fun of the scene in the film *Barbarella*, where an ice-yacht is propelled by a fan blowing into a sail, both being mounted on the yacht. Is this not the same as a crane lifting itself off the ground? In fact, it is not. More careful thought shows that it should work, but would be rather inefficient. The sceptic must try to be as sure of his facts as possible. It is easy to laugh at colour therapy, for instance, where coloured lights are believed to cure a patient. It is less easy to laugh if one knows that a certain form of jaundice can be cured merely by illuminating the legs with ultra-violet light.

To close, the reader is invited to practise his scepticism on the statements listed below. To the writer's knowledge, some of them are true, some are false, and some are undecided.

Polar bears can survive only by preying on penguins.
The leg-bones of horses have been known to disappear during a race.
There is a sequence of 1000 composite (non-prime) numbers.
Some crustaceans can transmute elements.
Statistics suggest that some species of bird are immortal.
Haiti is an island situated roughly south-east of Miami, USA.
The hairs of polar bears function like optical fibres.
All herbs in health food shops are good for one.
All food crops are healthy to eat.
All fish are cold-blooded.
All mammals are warm-blooded.

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This article is based upon material for a book in progress, with the working title A Modern Budget of Paradoxes.

Contributors!

We always welcome contributions from our readers: articles, book reviews, letters—anything!

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The Provenance of Misinformation

Nick Beard

Provenance: *the fact of coming from some particular source (OED)*

Interest in 'alternative medicines' is said to be increasing. However, a common criticism of alternative medicines is that there is little evidence that they work. Medicine is often accused of having double standards on this point, as many orthodox treatments have not been subjected to rigorous trials. To see why this accusation is unfounded, the nature of medical evidence should be examined in more detail.

There are two types of evidence that a treatment works: *confirmatory* and *supportive*, the former being stronger evidence than the latter. Valid clinical trials are the surest type of investigation, ideally using randomised double-blind controlled methods. A double blind trial compares an experimental remedy with a placebo—an inert substance—which is made to look like the remedy being investigated. Neither the patient nor the assessor of the patient's progress know whether active medicine or placebo is being taken. Patients are assigned to either the placebo or experimental group randomly, and quite large numbers are required to be sure of statistically significant results. Such trials are the only *truly* scientific method of assessing the value of a remedy. However, it is difficult to conduct such trials, and in the interim, patients must be treated. For example, we must await the results of double blind trials for appendicectomies.

In the absence of confirmatory evidence, the only alternative is a less certain method—an informed judgement on the basis of science and knowledge of principles of human physiology, pathology and pharmacology. Supportive evidence is collated from laboratory work and indirect clinical research from numerous disciplines. A less precise but valuable view can thus be formed—and we continue to remove inflamed appendices.

It is important to contrast both these methods with clinical impression. 'I have seen N patients with condition X, and treated them all with remedy Y, and my impression is that they have all benefited', say the practitioners. The recognition that such impressions are totally inadequate as the basis of assessment of remedies was a great step forward for medicine—a step none of the alternative therapies have taken.

Alternative practitioners excuse the absence of proper trials by saying that their treatments are too personalised, too tailored for specific patients to allow randomised, double blind trials. This might be a true description of the their practice—but beneath it lies a serious question. If such specific, sensitive remedies are concocted anew for each patient, where does the knowledge come from which enables this?

Homeopathy serves as a good example with which to examine this point more carefully. A patient suffering from condition X approaches a homeopath. The homeopath listens to the patient (which, despite much propaganda to the contrary, most doctors would!) and arrives at the conclusion that *distillate of dogwort* is required. There is however, no proper research to show that this substance is effective for condition X—only a 150 year old suspicion that undiluted dogwort causes similar symptoms to condition X when swallowed by healthy subjects. How does the practitioner know to use this substance? The stock answer is that the remedies are chosen by the application of principles, the law of similars in the case of homeopathy, and a knowledge of the homeopathic pharmacopia. If, in the absence of controlled trials, this is to be considered an acceptable reply, then there must be some evidence that the principles of the practice are valid ones.

Given the paucity of *in vivo* evidence, some alternative practitioners (although not many!) turn to laboratory research in their hunt for evidence—to support their claims to be using valid principles. Last year *Nature* published a paper which claimed to provide *in vitro* evidence for an effect which could have helped to explain homeopathy—the start of the Benveniste fiasco. The research appeared to show that basophil degranulation (an immune response in white blood cells) continued to be triggered by solutions of an antigen even to concentrations of 10^{-120}. However, this was followed shortly afterwards by a damning report from a team of investigators who found serious errors in the research methods involved, invalidating the research.

If treatments are not proven, they are experimental. It is surely highly questionable to make people pay for such remedies, in addition to the health risks involved. Examining the field of alternative medicine, one is left with a bleak impression. There seems to be a collection of remedies with no evidence of their efficacy, being selected according to principles without foundation. Those who would consider such remedies should beware—but is it right that the principle of *caveat emptor* (let buyer beware) should apply to health care? I think not. I believe it is time for better regulation of this field.

Nick Beard is a qualified doctor who works as a computer consultant in the City. He is currently studying logic and artificial intelligence at Imperial College, London. He is also treasurer of the Council Against Health Fraud.

Psychic Diary

Toby Howard

Not long ago something very strange found its way across the Atlantic and into my letterbox. I didn't ask for it—*it just came*. I had been sought out by the Church of the SubGenius.

The Church of the *what*? It took a little time to figure out. 'God' to SubGenii (as the members of the Church are called) is the mysteriously named J.R. 'Bob' Dobbs, some of whose many faces are illustrated here. But who is 'Bob'? Fortunately one of the Church's tracts puts it succinctly: ' "Bob" is the mystic supersalesman on whose wheeling and dealing skills the fate of this universe *depends*!! "Bob" is He who has come to awaken us to the SLACK that has been robbed from our kind for centuries—the only intercessor between mankind and the *stark fist of removal*, that all-smashing force from Above which we must simultaneously placate and defy.' And what is SLACK? Well, if you have to ask that, then you can never truly know.

The force behind the Church, and also its Sacred Scribe, is the Reverend Ivan Stang. Stang is a nonconformist, and in a big way. What Stang has done with the Church of the SubGenius is to create his very own, very odd, and very funny, designer cult. As he's proud to admit, Stang purchased his ordination for honest cash from 'Universal Life Church Inc.' of Modesto, California. But he has kept his integrity. As a legally ordained minister, he can (and does) perform marriages. But he doesn't use his ordination and Church status to avoid paying tax. (Anyway, the IRS didn't take him seriously!)

Stang has taken just about every 'cultish' idea and image you've ever seen, and whipped them all together into a frenzy of buzzwords, icons and gobbledygook. It's a rebellion, aimed not just against cults, obsessive beliefs and instant enlightenment operators, but also against *people against cults*. In Stang's world, everything goes, and *anything* goes, so long as it's not ... normal.

In common with many cultists, Stang is obsessed. Where he begins to differ, however, is that he *knows* he is obsessed, and is all the better for it. But what really sets Stang apart is that his obsessions are not with his own, but with *other peoples'* beliefs. The odder the people—and the weirder the ideas— then the more he likes it, the more he wants to celebrate it, and the more he wants to tell us about it. In fact, he operates his Church with the kind of enthusiasm you'd expect from a TV evangelist clutching a floppy bible, not from a somewhat off-the-wall amateur sociologist.

Stang is well qualified to mix his cocktail cult; for years he's been a mail-order junkie. He discovered that you can enter an extraordinary world of unusual ideas and beliefs—all for the price of a stamp. There are thousands of people out there, just *dying* to send you a leaflet about their ideas, their astounding discoveries, their genius, their secret revelations ... As Stang says in his book *High Weirdness by Mail* (Simon & Schuster, 1988), 'the travelling snake-oil medicine show isn't dead—it just travels by mail.' Stang is based in the United States, but the medicine show is here in the U.K. too. For several years I sampled the world of 'mail-order madness', scouring the classifieds in occult magazines. Hidden in innocent-looking listings you can find pearls of supreme strangeness. Now, with the arrival of Stang's directory, you can get serious, without the drudgery.

Stang is sincerely honest about what he does. He doesn't disguise his amusement or disgust at the delusions and strange beliefs he unearths. Behind his parody cult there is a serious mind at work. He says 'the kooks are our future. The average fifth-grader these days doesn't know whether Japan is a state or a city; wonders what happens when you get to the "edge" of the United States on a map; doesn't know, and *can't understand* what a glacier is; and even believes the government is there to protect him! The years to come promise incredibly fertile fields for the sowing of superstition, cultism and pseudoscience; they'll grow so fast we'll wonder if there had ever really been an Age of Reason.'

Stang's view of New Age nonsense crushing rationalism dead is a pessimistic one. But suppose it happens—then those who surrender to 'Bob', those who harness their SLACK, might just be ready for it.

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

For more information about the Church of the SubGenius, write to **PO Box 140306, Dallas, Texas, USA, 75214.**

Skeptic at large...

Wendy M. Grossman

It's not long since I had an argument about harmful vs harmless fantasies. It revolved around the following scenario: an atheist's wife dies, and when he tells their child the truth about it, the wife's mother steps in and tells the child the mother is in heaven with the angels, who will protect the child from all harm in the mother's absence. The child is much happier with this story, and eventually the father, out of cowardice, tells the child that the grandmother's story is the right one. My view was that the child's real problem was the differing stories, and that such a lie on the father's part would eventually seriously damage their relationship. The other person's point of view was that one must protect children who, he says, are not yet emotionally strong enough to deal with the tragedies of life. When I still disagreed, he told me that my philosophy meant one couldn't tell a child about Santa Claus either.

I more or less lost this argument (he had a louder voice), but I lived to think another day. My conclusion is that the two stories are not comparable. The Santa Claus story is a harmless fantasy told for fun. The 'if anyone tries to hurt you an angel will come down and whop them' story is a fantasy told to insulate someone from an unpleasant part of reality. I see that as harmful, and no matter how much I think about it, I cannot possibly imagine telling anyone that sort of story.

This time of year seems to breed more or less harmless fantasies, so here are a few of my favourites.

Groundhog Day. 2 February, in America. Legend has it that on this day the groundhog (or woodchuck) comes out of his burrow and looks around. If he sees his shadow, he gets scared and runs back in and goes back to sleep, and we get six weeks more winter. America being thorough, there is an official groundhog, Punxatawny Phil (named for his home, near Punxatawny, Pennsylvania). Every year a little knot of official observers go out to watch him and record what he does. It gets written up in the national press, too—but not in the weather section.

New Year's Day. In 1979, I saw in the New Year in Scotland, and experienced a whole host of traditions. The woman of the house cleaned frantically all day, washed all the clothes, and in the late evening everyone took a bath. Why? Well, according to tradition, however things are when the New Year strikes is how they're going to be all year long (it's no use pointing out the logical fallacy there). It is also supposed to be good luck if your house is 'first-footed' by a tall, dark (handsome) man. So at five minutes to twelve, all the men go out in the streets and wait for midnight to strike so they can first-foot their own houses (which seemed to me like cheating). Each carried: food (traditionally a bit of black bun, these days often a box of chocolates), drink (booze, of course), and fuel (a lump of coal is traditional). This ensures plenty for the New Year. After midnight, everyone started visiting. I later found out the basis for these traditions: until comparatively recently, quite often New Year's was the only day off for Scottish workers. You cleaned your house on New Year's Eve (Hogmanay) because that was the only time you had to do it, and the party started at midnight and went on until it was time to go to work on January 2. (Scottish readers, if I've got this wrong, please let me know.)

These days, many people are trying to create their own traditions. A friend of mine lives out in the country near Ithaca, New York (my old home), and every year he has a Winter Solstice party. When I went to it a couple of years ago, his house (which he built himself) was jammed with people. Each one brought a dish to pass for supper. Later on, each of us was issued with a smallish square of muslin and a piece of paper. We were to write on the paper a wish for the New Year and something we wanted to get rid of, and tie the paper up in the muslin. We then all trooped out into the woods behind his house where a bonfire had been laid. With much Indian-style ceremony, another friend lit the bonfire, chanted things, and threw various herbs into the flames which he said would purify the fire. We then took turns throwing in our bits of muslin and leading a song.

Similarly, another friend got so tired of going to New York New Year's parties where everyone did nothing but drink, that he created his own tradition of parties for people who like to talk. And they do, until he puts on the Ode to Joy, from Beethoven's Ninth, timed to end at midnight. While it's playing, everyone sits in a circle holding hands and being mystical. When it ends, they all watch the fireworks over Central Park lake.

I suppose the point is: all these things have some sort of meaning for the people involved. All of them have their entertaining side (except cleaning the house on Hogmanay when you're the one who's doing it). And all of them have some sort of personal benefit (taking the time to think about your hopes for the next year, or ways you wish you could change), and give their practitioners a sense of continuity.

And they're a long way off telling a child that the spirit of the Bonfire is going to protect it from playground bullies.

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

Heaven and Earth

Michael Hutchinson

In 1982 the BBC made a programme about metal bending in their series *QED*. The programme was called *Bend! Bend! Bend.* It was originally scheduled to be broadcast as the last programme in the autumn 1982 series but was postponed due to a more topical programme being broadcast in its place. There are two things about the metal bending programme which might interest skeptics.

Two of the psychics in the programme were actually magicians Steve Shaw and Mike Edwards who were taking part in James Randi's Project Alpha. Although there was a rumour that they were Randi's 'plants', there was no firm evidence. (Someone Randi had confided in had 'talked'.) Producer Tony Edwards had heard the rumour and asked Randi about it in an interview. Using 'sleight of tongue' Randi avoided a direct answer, thereby tricking Edwards who would later get his revenge. TV producers and journalists always have the last word!

Two weeks after the programme was supposed to be broadcast Randi, Steve and Mike held a press conference in New York to expose Project Alpha. This enabled *QED* to alter the programme before it was eventually broadcast to include details of the exposure. We will never know what the difference was in the two programmes. Did the first present Steve and Mike as genuine psychics?

In view of a statement made to *QED* by one of the scientists who tested them I would not be at all surprised if it had. Dr Mark Shafer, Deputy Director of the McDonnell Laboratory for Psychical Research said in an interview conducted before the exposure 'I don't believe they're tricking us, especially based on the research that we have done in the last year where we have exerted as tight a control condition as we could think of even in consultation with magicians to see if the influence holds up, and we have found evidence that it does. Not as strongly under these control conditions, it's as if somehow the extra controls seem to inhibit it, but still an effect persists.' This interview was broadcast in the revised programme, much to Shafer's embarrassment, but its inclusion in the first would have had a completely different message.

Towards the end of the broadcast programme, Tony Edwards got his revenge on Randi. Narrator Anthony Clare told viewers 'What with planted fake benders, gullible scientists and wolf man disguises around, the truth hasn't got much chance. Indeed, back last summer we had asked Randi quite specifically whether Mike and Steve were plants. His answer then, sounded like a denial.'

Randi's response in the programme was 'It's absolutely not true. I have certain ethics in this business. I would never, with a scientist, get together to try to deceive somebody or embarrasss somebody.'

Clare commented 'Clearly in the metal bending business the truth isn't easy to come by.' Clearly, in the media, the truth isn't easy to come by. *QED* had only shown part of Randi's reply, taking it out of context to imply that he had 'directly' denied the question. Tony Edwards' question, and Randi's full reply were:

'Now people have said that they are plants of yours. That's a rumour I have heard. Is that right?'

'I have heard rumours that Philips and I, that is Peter Philips, Peter R. Philips, the scientist out there who got this half a million dollars grant from the MacDonald Aircraft Corporation, and I, and the psychics, were all working together in order to embarrass the Parapsychological Association. It's absolutely not true. I have certain ethics in this business. I would never, with a scientist, get together to try to deceive somebody or embarrasss somebody. The only kind of thing I would ever do would be a social experiment, as I have, I did right here for a newspaper in this very city. I went into a newspaper posing as a psychic.'

Having given you all of the evidence I leave it to you to decide whether Randi was treated fairly or not.

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

We are currently looking for ways to increase the circulation of the *British & Irish Skeptic*. For instance, if you feel that your local newsagent might be willing to sell the magazine on a sale-or-return basis, or if you have access to publicity (e.g. local newspapers) please let us know.

Reviews

A special report on radio and the paranormal

British radio, in particular the BBC, is regarded in many quarters as a shining example to the English-speaking world. The BBC, in particular, makes a considerable effort to appear balanced in its coverage of political events. But how balanced is British radio in its coverage of parapsychology, pseudoscience and the paranormal?

The British & Irish Skeptic asked a number of radio listeners to report on programmes, broadcast over the last two or three months, dealing with the paranormal. Their reports on programmes from both national and local radio follow.

'In the Beginning', *Soundings*, BBC Radio 4, 1 January 1989.

At a time of the year when a fat bearded gentleman accompanied by a red-nosed quadraped defies gravity and visions of rose coloured elephants afflict a significant fraction of the population it is perhaps fitting that BBC Radio 4 should broadcast a programme on biblical creationism.

Creationism is a brand of nonsense which has continued to plague the southern states of the U.S. since the infamous Scopes monkey trial in the 1920s. With the exception of the 'Deep North' of Australia, creationism has, to a large extent, left the rest of the western world alone. A few more broadcasts like *Soundings: In the Beginning*, broadcast on BBC Radio 4 on New Year's day, however, and perhaps it will begin to get a foothold on this side of the Atlantic as well. Although the presenter, Trevor Barnes, appeared to have a fairly sceptical attitude to the contentions of the creationists, the overall impression which the programme created was that biblical creationism at least presented a serious challenge to evolution—an impression which I feel the majority of Christians in this country would reject.

Creationists, who believe in the literal truth of the creation story in Genesis, add up the ages of Adam's descendants and conclude that the Earth was created somewhere around 4000 B.C. When asked what a scientist should do when faced with the rather significant difference between this figure and that obtained from geological evidence, headmistress, Sylvia Baker, one of the contributors to the programme, gave a response which perfectly encapsulates creation 'science': 'I think that if you are convinced from scripture that the bible teaches the earth to be young then that is your viewpoint and so, as you approach geology, you consider processes that could have brought these things about far more quickly. You look, in other words, for ways in which to interpret the evidence consistently with that.'

This statement is equivalent to a politician openly declaring: 'I think that if you are convinced that Margaret Thatcher's policies are the right ones for the country then you fiddle the statistics on unemployment, economic growth, inner-city deprivation and crime to reflect that viewpoint.' Now, although politicians undoubtedly adopt this approach, were any politician to make this statement to a radio interviewer he would expect to be given a very hard time in the interview. All the newspapers the following day would undoubtedly also carry the story. Sylvia Baker's statement went entirely unchallenged and illustrated clearly that standards which the BBC might apply to politics are certainly not maintained when dealing with pseudoscience. —PN

'Act of God', *Soundings*, BBC Radio 4, 8 January 1989.

This programme started with a simple premise: God fashioned the world. But does He now sit and watch His machine hum, content that His inexorable Laws will one by one come into effect? Or does He from time to time make fine adjustments to the machine when He sees fit? These were the questions explored by presenter Libby Purves and a host of Christian thinkers in a program that, at first, promised to be intriguing.

Disasters occur around the world with disconcerting frequency—people suffer through apparently no fault of their own, and we may see two minutes of their pain on the Six o'clock news. But for us there was a

recent event which made these questions more relevant than they had been for some time. In July 1984 the South transept of York Minster was destroyed by fire following by a lightning flash. This much is incontrovertible. But just how did it happen? There are those who feel that it was God's vengeance against the recent ordination as Bishop of Durham of David Jenkins—a man with his own very individual views on the Virgin Birth and the story of the Empty Tomb. *Soundings* sought out proponents and opponents of the 'Wrath of God' theory. The most reasoned, if vague, was the Reverend Tony Higton, who made much of certain 'mysterious' circumstances associated with the fire. Unfortunately, he would not, or perhaps could not, go into specifics. Quite what was mysterious about it all, we never found out. Surely this was what we needed to know, and it should have been incumbent on Ms Purves to eke this information out of the Rev Higton. This she failed to do. Next call was on Dr Clifford Hill, editor of a somewhat strange magazine called *Prophecy Today*, which regularly links floods, fires and movements of the Stock Exchange with the Wrath of God. As you'd expect from a man in regular communication with the Architect of the Universe, Dr Hill's position was fairly clear. In his magazine he writes the prophesies of God in the first person, and he is in no doubt that God was punishing the wicked Archbishop of York for consecrating the Bishop of Durham—*I lit the flame under the furnace with the lightning strike on York Minster.*

David Jenkins himself was careful to distance himself from the question of Divine intervention; quoting the tale of a vicar who claimed that every time he visited London God saved him a parking space, because He knew he wasn't a very good driver, the Bishop warned that trusting in Divine intervention was in effect an escape from reality; and only one step from saying 'My God will save me, and you will perish because you believe in the wrong one.'

The program had a dismal conclusion. A stern voice left us with the picture of a God sending us the Aids virus as a 'warning' against unchristian behaviour.

Programs of this kind infuriate the reviewer, because of the closed framework in which they operate. They are straightforward 'religious broadcasting', but are often not announced as such; atheists, agnostics, humanists and free-thinkers are given no role to play in the discussion. The presentation is aimed squarely at 'believers', and they end up sold short by the quality of interviewing, research and debate. —**JY**

Invasion of the Mindsnatchers, BBC Radio 4, 21 & 22 December 1988.

The Wednesday feature on Radio 4 on 21 December, entitled *Invasion of the Mindsnatchers*, spent forty five minutes examining the reasons behind the widespread (and apparently contagious) belief in the United States in matters irrational and paranormal. Creationism only got a brief mention, presumably because producer Nick Morgan and presenter Peter Evans felt that this was of little relevance to the British [We hope they listen to Radio 4 on New Year's Day—*Eds*].

Of course, radio and TV programmes and newspaper articles on the paranormal are not in any way rare in themselves. No, what was unusual about this particular broadcast was not the subject matter but the fact that it was produced and presented by members of the BBC Radio Science Unit. Take a few seconds to remember any item on a paranormal topic that you have read, watched or heard recently. Without the use of telepathy, clairvoyance or any other extra-sensory ability I can state with a high degree of certainty that it was not written by a science correspondent nor was it produced by a team noted for its scientific programme making. Sure, there are occasional exceptions; in the last few months there have been a number of items on homeopathy and the Shroud of Turin and some of them have been written by science writers but these are the exception not the rule. Those articles you read recently on astrology, hauntings and the power of ESP in conquering disease did not come from the pens of journalists knowledgeable in science; Matthew Manning, self-styled psychic healer was interviewed, not on *Medicine Now* but on *Midweek*.

Invasion of the Mindsnatchers, thus differed considerably from other programmes on the paranormal in that its main concerns were with the effect of irrational beliefs on society and the reasons behind the wide acceptance of many such beliefs. The programme was based on a series of interviews with attendees at the conference in Chicago last November on 'The New Age - A Scientific Evaluation' organised by CSICOP. Professor Ray Hyman of the University of Oregon and James (The Amazing) Randi both expressed the view that one way of reducing irrational beliefs in society was to present science in a more entertaining manner. In Britain and in the U.S. I suspect that for many people the words science and entertainment don't usually come together in the same sentence. Perhaps science teachers and the planners of school syllabuses indeed must bear partial responsibility for the growth of irrational beliefs which seem pandemic in both American and British society.

For habitual critics of the output of the BBC Radio Science Unit the programme perhaps lacked gratuitous sound effects, rock music and other features which increase listening figures (although there were a few snippets of New Age Music). My one major complaint about the programme was that, after the first few interviews, it was not possible to keep track of who was speaking but, this irritation notwithstanding, *Invasion of the Mindsnatchers* gave a fascinating insight into the way in which irrational belief permeates American society in particular. But let us not be complacent, the U.K. is not far behind. —**SD**

Shelley von Strunckel, Radio Oxford (November).

After listening to Radio Oxford's phone-in with Shelley von Strunckel, I could not help but feel that I could have spent my time more profitably - the fridge really did need cleaning after all. The phone-in interviewer invited the public to speak to Ms von Strunckel about their psychic experiences and to guess, or should I say 'sense', the identity of a mystery person. Once the mystery had been solved, (it was Merlin by the way), the phone lines became eerily silent. Had the spirit of Merlin, peeved that he had been so easily rumbled, decided to jam the lines with his magical powers?

If he did so he did everyone a disservice. The phone conversations had certainly been rather dull and the platitudes in the replies would have done justice to any tabloid agony aunt but the desperately cosy chat which covered the silence from the public was excruciatingly boring. The 'psychic' Ms von Strunckel described herself at one point as not being a psychic. She did, however, talk about her overwhelming sense of horror on going to visit the site of Pompeii. She could 'feel' the agony of those who died. Frankly, I defy anyone to go to Pompeii and not feel the sorrow there - the effects of the volcanic erruption which engulfed the town are so well documented and so widely known that one's, dare I say it, imagination is all that is needed. If not a psychic what then was she? An armchair psychologist, perhaps? But she said nothing that could not have been gleaned from articles in any women's magazine. The whole exercise was a waste of time - those who profess an understanding of psychic phenomena will have to pull a more 'powerful' punch than this if they want us to listen. —JB

The Food Programme, BBC Radio 4, 13 January 1989.

The tone of this edition of the food programme was set right at the very beginning when presenter, Derek Cooper, asked 'What part do the planets play in the growth of tomatoes and potatoes?' This was immediately followed by a brief interview with Belgian sculptor Norman Mommens who sculpts in stone on a farm in the north of Italy. Norman has found that shapes have a 'kind of radiational frequency, just like all living things'. If this frequency coincides with that of nitrogen or calcium or oxygen Norman feels that the presence of his carvings helps the plants to grow. This and other odd beliefs are included in the word 'biodynamics' which has been coined to describe the 'interrelated concept of man and the world he lives in'.

Biodynamic farming is similar in many ways to organic farming in the practical approaches towards farming but it differs in that it emphasises a relationship with the cosmos. Analytical chemist Dr Neil Warnt described it in these terms: 'One may even look at it like homeopathy in relation to medicine. We know it works but it is always difficult for a scientist to actually say we can prove it.' In any case, both organic and biodynamic farming reject the use of artificial fertilizers and chemicals but biodynamic farming differs in that it tries to use only renewable local resources to produce food, such as fertilizer produced by the farm's own animals rather than imported guano. Biodynamic farming claims to offer a more integrated, or holistic, philosophy than organic farming.

Homeopathy forms a large part of this philosophy. At Emmerson College, a training and research centre for biodynamic farming, they use homeopathy whenever possible, including for the treatment of lungworm in cattle. Thirty of the fifty biodynamic farms in Britain sell their produce under the Demeter symbol. This produce is grown using what they call 'vital homeopathic substances' an example of which is the organic preparations they add to compost heaps before spreading on the soil. According to Pat Mcanaman, a teacher at Emmerson College, this is 'to bring a special sort of vitality into them' to help the plants to grow better. This claim to vitality was an example of a recurring phenomenon in the programme, the use of vague terms when describing a claim or belief.

Another part of the philosophy seems to be a form of astrology. McManaman went on to say that a lot of experimental work had been done on the phases of the moon and their effects on growth with the new and full moons being observed to have a very strong effect on growth. Later Derek Cooper said, 'This concept of a seamless unity between the living soil and the movement of the planets is central to the biodynamic

farmer.' It is conceivable that the moon could have an effect on crop growth (perhaps through the light it reflects) but it seems fairly implausible that the planets could have any effect. This claim, however, was not examined any further.

The programme finished with an interview with two people, both presented as experts in these matters. It was not a very balanced interview as both supported biodynamic farming and no criticism of their claims were presented. Dr Stuart Brown a soil scientist at Reading University talked about the 'life body' which he described as physically insubstantial but capable of having major effects on a plant as it is instrumental in the form of the plant or of anything with living cells (a sort of vegetable soul). He said that the life body comes from the cosmos and can only grow strongly with the plant if it is in 'living soil' (i.e. soil which has not had a heavy use of artificial fertilizer). This stronger life body means biodynamically grown food can be recognised because of its taste and better keeping quality. Despite the extraordinary nature of this 'life-body' claim no mention was made of any scientific work demonstrating its existence. However, because he was introduced as a university scientist and no challenge was made on the validity of his claims, listeners might have given them more weight than they would have done otherwise.

Another speaker was Laurence Woodwood, director of a research centre of the Soil Association. As this organisation promotes organic farming he was unsurprisingly favourable towards biodynamic farming. He said it had not clearly been demonstrated but that evidence existed showing there is an extra dimension to organically and biodynamically produced food, which some people call vitality. He made no attempt to clarify what he meant by an extra dimension. If one wanted to make a positive comment on biodynamic farming it would be that Emmerson College is trying to find intensive farming methods which will not ruin the soil in the long run. It was claimed that by the use of close planting, quick rotation and green manuring soil, fertility in infertile areas can be built up and that these methods were achieving high yields.

At no stage in the programme were views critical of biodynamics expressed. In fact the programme was so uncritical of the beliefs of biodynamic farming that it could well be used as an advertisement to publicise it. —WC

LBC Radio (London).

Surely no part of the country can be as badly served by uncritical radio as London. We have to suffer many hours of the paranormal and quackery on LBC (London Broadcasting Company). At least two hours of phone-in programmes dealing with quackery are broadcast (each week) and this sometimes increases to three when a homeopathic vet is given air time. Their regular 'alternative medical' adviser has even been promoted to radio presenter, with his own show on Sunday afternoon. This sometimes covers quackery but mainly deals with other subjects.

The paranormal is regularly promoted on Pete Murray's phone-in programme. (Yes, *the* Pete Murray of disc-jockey and 6-5 special fame.) Every Monday, an hour is given over to one sort of fortune teller or another. Christian Dion - who backed out of proposed tests by David Berglas and Robert Morris - does cold reading using playing cards which *he* selects; a second fortune teller also uses cards but allows listeners to use their own pack of either playing cards or Tarot cards; a third seems to use a mixture of both numerology and astrology. Murray also devotes one hour a week to his *Mysteries 'Phone-in.* This was previously a fortnightly programme but lately has been on every week. Various guests are used, among them Bob Couttie, 'reluctant skeptic' and author of *Forbidden Knowledge.* Mostly the programme is used to put paranormal tags on all manner of anomalous experiences many of which are obviously psychological. If LBC had any integrity, in this regard, it would either cancel this programme or use a good psychologist not committed to paranormal explanations. But that would be a real turn-off for its gullible listeners.

Another regular, but this time in the late evening, is a psychologist who explains caller's dreams. I am no expert but consider this sort of thing to be in the same sort of category as the paranormal; perhaps more specifically a pseudo-science. In addition to these regular broadcasts there are other phone-in programmes dealing with paranormal subjects as well as 'magazine' type and 'news' programmes giving time to graphologists, Chinese astrologers, conventional astrologers and on one occasion even a Bates Eye Exercise practitioner. And all so uncritical and naive. Not surprisingly, the station doesn't have a science correspondent!

About ten years ago, Larry Adler, (yes the mouth-organist extraordinaire) called LBC 'Low Brain Count'. He was not wrong. Their advertising claims it is the 'information station'. Misinformation station would be more accurate. —MH

Despite an admirable contribution by the BBC Radio Science Unit, and a programme apparently so boring that even dedicated followers of the psychic scene were not moved to phone in, it is clear from this small sample that the skeptical balance in radio broadcasting is sadly absent.

Later in the year we intend to present a similar review of television coverage of parapsychology, pseudoscience and the paranormal. We invite readers to contribute reviews or tapes of relevant material.

The dedicated radio listeners were: Phil Newman, John Yates, Steve Donnelly, William Coyne, Jennifer Bradshaw and Mike Hutchinson.

Letters

Freedom

Your correspondent Hocus Pocus inserts, into a lively and readable article (*Down to a Bristol Fair*, B&IS II.6) some dubious propositions presented as truths: that 'we know that absolute freedom would destroy society'; that 'we' frame laws; that 'we willingly submit to curbs on our freedom because we recognise their necessity'; that followers of the current fashion for scruffiness in casual dress ('what seems to pass as today's norm') are 'a bit odd'; that readers of coloured comic books are dull and hopeless.

Of course, being a skeptic with regard to the paranormal does not imply being a sceptic in general, and there is nothing to prevent a skeptic (with a k) from embracing preposterous beliefs. All the same it is disconcerting to see such opinions trotted out in a skeptical journal.

Donald Rooum
London

Psychic Snails

Readers who would like more details on the astonishing story of the Snail Telegraph (*Psychic Diary*, B&IS II.6) are referred to *Historic Oddities and Strange Events* by S. Baring Gould (First Series, 1889) which devoted a chapter to the subject.

Leslie Shepard
Dublin

Astrological Schooldays

May I, through the courtesy of the Editors, make an observation which has not, to my very limited knowledge of these matters, been hitherto placed on record? I am unsure if it holds any significance—but here goes.

I have an unusually vivid memory of my earliest schooldays, and like many people I went from the first year of infant school (aged 4 years) through to the final year of junior school (aged 11 years) with more or less the same classmates. In those days, age difference within one's class at school seemed to matter, and a few months' advantage would naturally have, on balance, some maturational significance, more so in the very earliest years. Moreover, I distinctly recall that we perceived those whose birthdays came round early in the school year as being in some way special. I recall, too, that they tended to be favoured in the allocation of privileges and responsibilities; for instance, for some unfathomable reason, in our first class at junior school we filed into school assembly in order of age, with the oldest leading (and, I think, boys first). In other words, we seemed to be conscious of age difference and the older boys were on balance awarded a slightly higher status. I can still to some extent recall who were the 'grown-up' members of my class and who were the 'babies'.

Now because the school year runs from September to July, the oldest children in the class would usually have been born in the autumn months and the youngest in the summer months. The former would have as their astrological signs Virgo and Libra and the latter Cancer and Leo. Indeed this pattern remained largely intact throughout secondary school.

Could these circumstances, I wonder, result in character differences between children born under these different signs? And could these differences persist into adulthood as a result of these early formative experiences? Even tiny differences may emerge as statistically significant when large samples are compared.

I offer no evidence to support or refute my conjecture; my purpose in remarking on this is to draw attention to possible environmental and cultural influences on personality which may give rise to differences between people grouped according to their astrological sign.

Perhaps there are others.

Michael Heap
Sheffield

Fuzzy Logic

The writer of a recent letter to the *Skeptical Inquirer* lamented that relativism was widespread among his friends and colleagues at university. He ended by saying that relativism (and hence gullibility) must be fought with philosophy as well as science.

This letter, and recent encounters with members of 'self' religions, believers in astrology, and Jungian psychotherapists, provoked the following disorganised and incoherent thoughts.

The problem is not just one of scientific ignorance. We wouldn't automatically have a non-gullible population once everybody knew that the earth went round the sun and not vice versa. The problem branches out into philosophy one way and social psychology the other.

To take the psychotherapists as a sample group. They had all ceased to be Catholics (like I had), they said; but then they brought in the collective unconscious and made it play the part of God. They had rejected the Christian idea of spirituality, but spirituality still played a part in their world view. What I would call mind, emotions, psychology, they called spirit. I said I was a materialist, but they seemed to think that meant I wanted to have lots of money. I explained, and then they called me an absolutist.

They seemed to think an absolutist was a heretic, no argument. (I should have shouted back 'and you're a vitalist!' but I didn't think of it in time.)

By this time I had reached the point I always reach in arguments like this. They said: but nothing is true really, nothing is truer than anything else, all arguments are equally valid, you don't apply absolutism to relationships do you? (All views were equally valid—but not mine. My views seemed to upset them quite a lot.)

I asked them what advantage there was for them in this fuzzy view of the universe?

They complained that this was a value judgement; my use of the word 'fuzzy' was perjorative.

They quoted Heisenberg's uncertainty principle; I said it only applied at the subatomic level. But everything is connected! they cried. I said, no it isn't, it would be nice if it was, don't you see it is our job to make the connections?

I tried to get them to prove to me that they really lived by what they claimed to believe—how could they be sure what day it is? People never like this. They said they weren't talking about the mundane, everyday world.

They said that adversorial argument and confrontation never lead to the truth anyway. They said that being aggressive was no way to convert people to my way of thinking.

Yes, relativism is rife. What can we do? I am trying to find out from people what they get from it. Is the attraction that it seems to promise that you can have everything you want, because according to this view everything is possible? Or is it just that people don't like being beaten in arguments and will say anything to avoid appearing to be defeated?

Has it got something to do with class and education? The uneducated are absolutists, like me. They believe in devils and magic. (I used to, once.) But educated people have heard that 'science' disallows their new version of religion/magic. So they sneer at blinkered, dogmatic 'scientific materialism'. Perhaps snobbery comes into it. 'Higher' thought must be contradictory, or it isn't really profound... We don't want that boring old low-rent pragmatism. The 'holistic' approach embraces therapies whose theories must be mutually contradictory—sorry, no of course they are *complementary*, aren't they.

It seems to me at the moment that the embrace of illogic is an attempt to cling to a religious worldview. But the opposition is not just one of religion versus science. Where are politics in all this? If everyone makes their own reality where does that leave starving people in the Sudan? If we don't care whether things work or not, how can we ever cure hunger, disease etc?

These people seem desperately reluctant to admit that what you see is what you get, that this is all there is. So much of it is so ghastly, after all.

I agree that much of reality is ghastly. But unless you can see that it is really real, you won't be able to do anything about changing it. The trouble with fuzzy worldview holders is that they seem unable to see the moral and political consequences of their views, because they don't see that any views have moral and political consequences. They can't make the connection

Lucy Fisher
London

Odd Items

I was recently involved in a preposterous shambles of a TV programme, from which I was able to carry away one bizarre trophy. This trophy is a catalogue of the wares available from the Fortune Tellers and Occult shops of Mr Steven John; who describes himself, variously and comprehensively, as 'Clairvoyant Extraordinaire; Author, Lecturer, Exhibitions, etc.; Tarot, Palmistry, Astrology, Numerology.'

I want to draw your attention to two items in this catalogue, each of which, for very different reasons, I am sure you will want to share with readers of the *British & Irish Skeptic*. The first of these, No. 33 in the catalogue, I offer as good if perhaps not wholly clean fun:

> *Tawaza mixture*: This preparation is for prostitutes. If you are a lady of pleasure you will be made happier by knowing this secret. The ecstasy you will be able to give your clients will soon ensure that they make you very rich indeed. £100.00.

The second item which I want to pick out, item No. 26 in the catalogue, is in its implications not funny at all. This item reads

> *Mtoto*: Many women who long for motherhood are able to conceive but not to carry the baby for its full term. Mtoto is a remedy to prevent the great unhappiness caused by miscarriage. More detailed information about this liquid and its use can be provided. £300.00.

Besides writing this letter I have sent another to Ms Esther Rantzen of the BBC-TV programme *That's Life*. For it would be in the best traditions of that entertaining but also public-spirited programme; both to share Item 33 with their viewers, for entertainment; and to try to put the hounds on the advertiser of Item 26, for trying to cozen would-be mothers.

Professor Antony Flew
Reading

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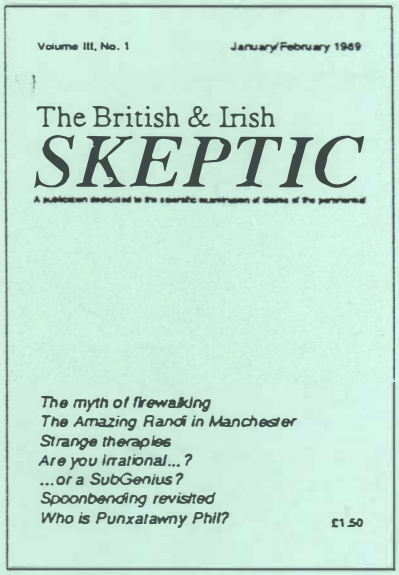

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No. 6 Bristol Psychic fair (Hocus Pocus); The Incredible Mr Newman (Frank Chambers); Skeptical Predictions for 1989 (Marjorie Mackintosh); Joe Nickell on the Shroud of Turin; Psychic Diary; Reviews: CSICOP '88; Bienveniste on 4.