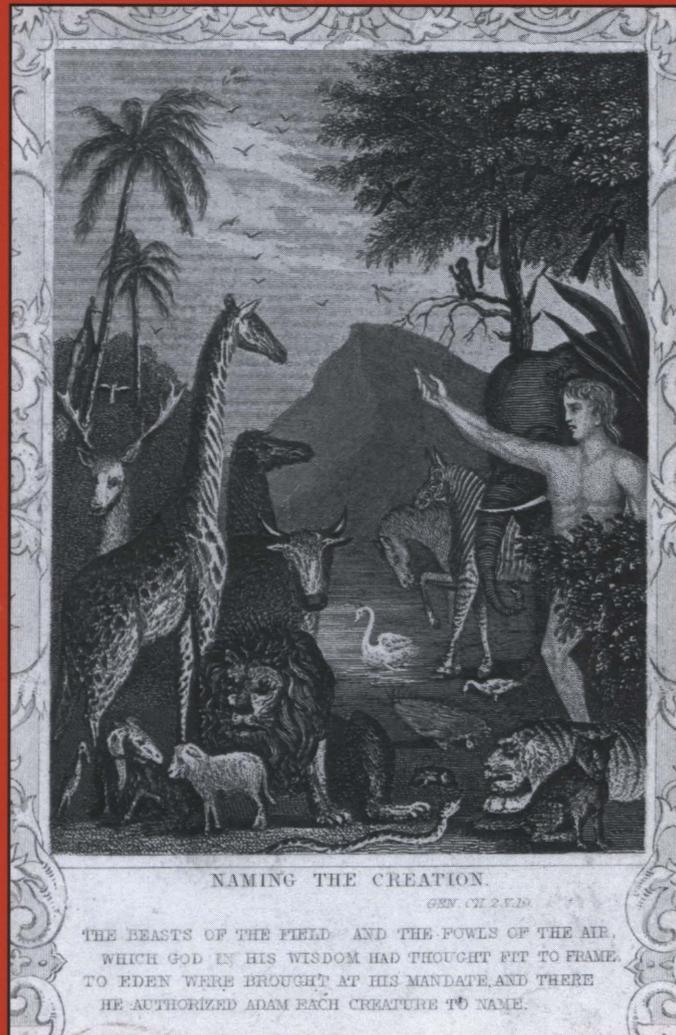


Volume 18 Number 2  
Summer 2005

# The **Skeptic**



## **Why Creation Science Must be Taught in Schools**

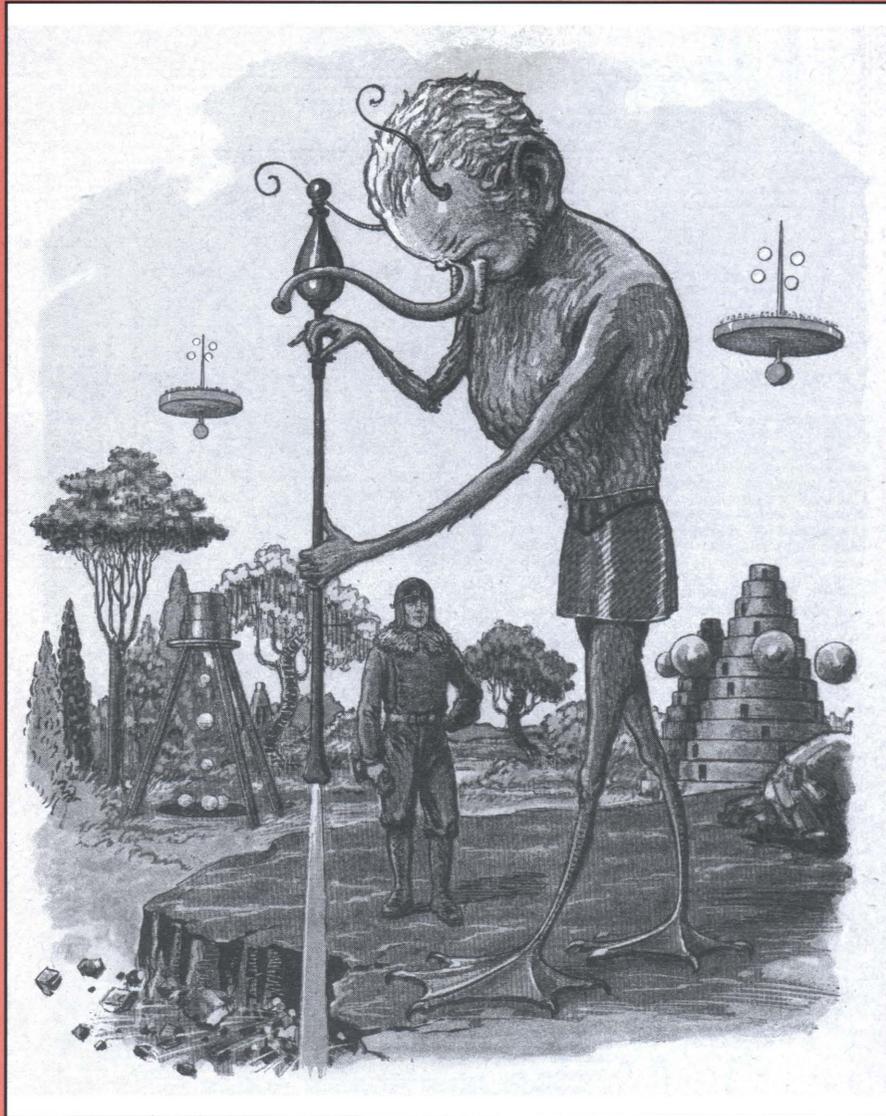
*Also in this issue:*

**The Pam Reynolds Story Part 2**

**The Angels of Mons Part 2**

**Plus: News. Book Reviews. Comment. Humour**

## *Hilary Evans' Paranormal Picture Gallery*



### **HI MARTIAN TECH**

The technology of the Martians has always been one step – at least – ahead of ours. So it was when they tried to invade our planet, back in H G Wells's day, and we still hadn't caught up with them in the 1920s, though by that time we were at least on more friendly visiting terms. Here, a Martian demonstrates to a space-traveling earthperson how he uses a ray gun to break up rock, a sophisticated improvement on the pneumatic drills we still use to dig up our roadways.

Source : unnamed artist in *Allers Familj [sic] Journal*, Sweden, 10 September 1924

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

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Editorial enquiries to  
**The Anomalistic Psychology  
Research Unit  
Department of Psychology  
Goldsmiths College  
New Cross, London SE14 6NW  
United Kingdom**

Subscriptions/sample issues  
**Mike Hutchinson  
10 Crescent View  
Loughton, Essex IG10 4PZ  
United Kingdom**

Email: [edit@skeptic.org.uk](mailto:edit@skeptic.org.uk)  
Web: [www.skeptic.org.uk](http://www.skeptic.org.uk)  
AOL Keyword: **skeptic**  
Tel.: 07020 935 370  
Fax: 020 7919 7873 FAO Chris French

Editors  
**Victoria Hamilton  
Chris French**

Editorial Assistance  
**Wendy M Grossman  
Steve Donnelly  
DLF Sealy  
Julia Santomauro**

Founding editor  
**Wendy M Grossman**

Webmaster  
**Phil McKerracher**

AOL Area  
**Liam Proven**

Finance Manager  
**Mike Hutchinson**

Skeptics in the Pub  
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Cartoons  
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Tim Pearce  
The Parking Lot is Full**

Special Consultant  
**Cyril Howard**

Graphic Design  
**Christopher Fix / Lisa A Hutter**

Illustrations  
**Mary Evans Picture Library**

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# Editorial

Victoria Hamilton and Chris French



**HELLO AND WELCOME** to issue number 18.2 of *The Skeptic*. In this issue we see the conclusions to both The Angels of Mons and The Pam Reynolds Story. Gerald Woerlee directs us through the operating table experiences of Pam Reynolds from the perspectives of both anaesthiologist and sceptic. Suggesting that Pam Reynolds was actually conscious a number of times throughout the operation, Woerlee is then able to consider a number of factors to explain Reynolds' distinctly paranormal interpretation of events. Taken from Woerlee's angle, this appears to fit with the fact that the less we know about something (in this case the functioning of the human body under anaesthesia) the greater chance there is for it to be construed in various subjective ways, such as the paranormal.

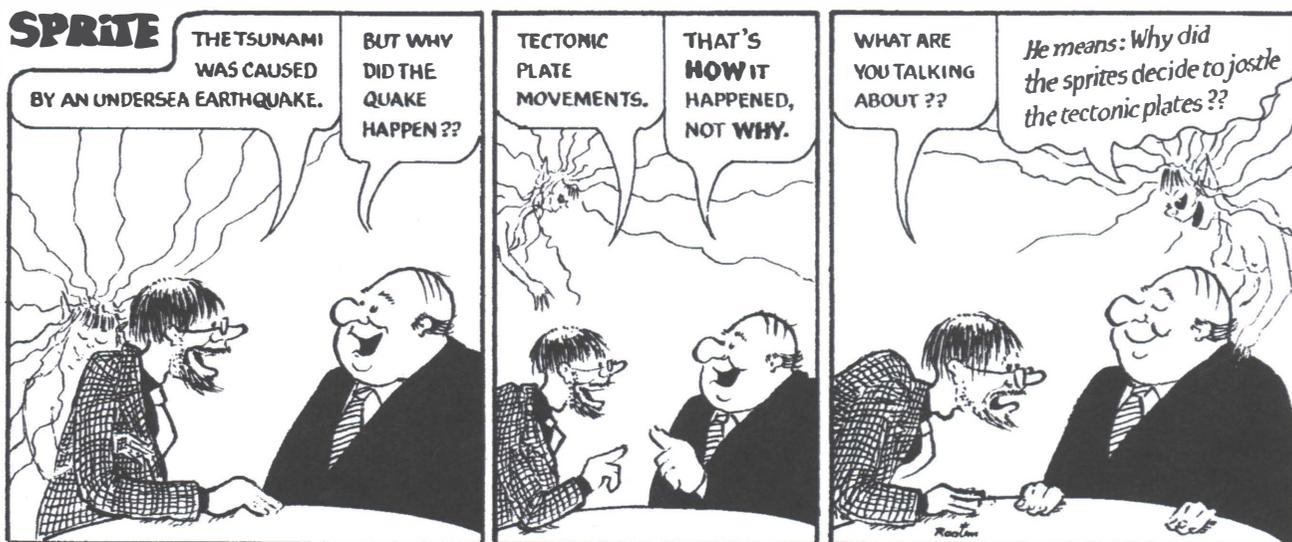
The second part of Scott Wood's Angels of Mons article likens the Mons tale to other myths. Wood chronicles legends from an Australian priest being protected from murder by angels, to more contemporary folklores surrounding the World Trade Centre bombings. Wood also draws parallels from these Judeo-Christian legends to those from other faiths and cultures. Through these comparisons, Wood illustrates the similarities and proposes that the mythical tales have evolved in parallel over thousands of years, tweaked accordingly to fit in with the relevant culture. It seems that no religion, nor cultural group, has been immune to the notion that supernatural protectors sometimes intervene, albeit selectively. Isn't it amazing

that God is always on *our* side? He's obviously an omnipotent being of impeccable taste!

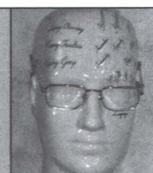
Our third article introduces an unconventional way to study Creationism. Yes, it is being taught in some schools as a premise to 'rival' Darwinian evolutionary theory, but could we encourage or utilise its presence in the curriculum for another purpose? Stafford and Brown put forth their case that the study of Creation Science can provide valuable lessons in learning to evaluate theory and evidence critically. Rather than immediate dismissal, is it better that we thoroughly consider the tenets and methods of Creation Science in an open forum, say, a classroom? Stafford and Brown suggest that considering the way Creation Scientists reach their conclusions may provide an important example of how *not* to conduct science. And where better to demonstrate solid principles of science than in a classroom of budding scientists? Perhaps, on the basis of the same argument, other pseudoscientific topics should be covered in schools? It would be nicely ironic to see sceptics campaigning for the inclusion of astrology, feng shui and UFOlogy in the national curriculum!

Our regular contributors, as always, provide their perspectives on all things sceptic. We also have book reviews, cartoons and letters. We hope you enjoy reading another issue of *The Skeptic*!

With best wishes until the next issue, Victoria and Chris.



## Hits and Misses



### Alternative guidance

As if he weren't busy enough trying to get his wedding off the castle floor in early 2005, Prince Charles was involved in publishing an alternative health guide. Well, he probably didn't do it personally. The Prince of Wales' Foundation for Integrated Health has put out a 50-page booklet (downloadable from [http://www.fihealth.org.uk/fs\\_publications.html](http://www.fihealth.org.uk/fs_publications.html)) intended to help people find their way through the maze of treatments available, whether those come through the NHS, private practitioners, or charities. The government, which helped fund the booklet, has also given the foundation £900,000 to help improve regulating standards.

The Foundation's six key principles sound unobjectionable if only because they're somewhat vague: for example that healthcare should have an evidence base, that individuals should take more responsibility for their own health care, and to promote "an holistic and integrated approach to health care which engages with all aspects of a patient's being".

Most of the guide is pretty sound advice. It includes some general information, such as a list of questions to ask a practitioner – any practitioner – before embarking on a course of treatment. There are loads of resources, both print and Web, for getting more information; this seems reasonably well-balanced, and includes orthodox medical journals and indexes as well as associations of alternative practitioners and the like. And the guide includes a section on each of the most common therapies people seek out – acupuncture, Reiki, homeopathy, herbalism (both Western and Oriental), reflexology, aromatherapy, shiatsu, massage, spiritual healing, yoga. Each of these sections includes a brief explanation of what the therapy is, how much it usually costs, what happens in a consultation, and the names and contact information of any regulatory body. It also talks about the dangers of drug interactions between substances like St. John's Wort and antidepressants. It's respectable consumer advice, and tells you to disclose to all practitioners the full list of everything you're taking, whether or not it was prescribed.

What the guide doesn't do is pass judgement on the efficacy of any of these therapies. It warns you not to mix aromatherapy and homeopathy (though how an interaction between these two could be dangerous it doesn't specify), and also advises that if you are seeking reflexology and have cancer you should look for a reflexologist who is specially trained in cancer treatment. Other than these two 'what-the-huh?' moments, the guide is sound and unobjectionable enough. Still, we're helping to pay for it, folks, so if you have objections, you have the right to voice them.

### More ghostbusters

Interesting to discover that there's yet another ghost-busting outfit operating in the UK: the Paranormal Research Organisation ([www.paranormalresearch.org.uk](http://www.paranormalresearch.org.uk)). "The Paranormal Research Organisation is dedicated to professional and authoritative research into ghosts and other strange and supernatural phenomena", the



group's mission statement reads. It sounds serious. Both the press coverage we've seen and a portion of the group's Web site talk about the group's interest in "orbs" – little blobs of light that appear on high-resolution digital photographs taken in the process of investigating phenomena. Strange. We thought those were UFOs.

### Corporate spiritualism

Findhorn has been in the news again, this time as a destination for large companies searching for new ways to motivate their staff. According to the *Sunday Times*, outfits like Shell, BP, and PriceWaterhouseCoopers have sent staff there to commune and pick lettuce. All part of the vogue for "emotional intelligence", which is becoming the buzzphrase *du jour*. Still, the shift to consulting for large companies has to be a help in dealing with the Findhorn Foundation's debt, which was as high as £850,000 in 2001. Not that we should be snide about this. There's nothing wrong with spirituality in a gardening community; doubtless the sceptics would sell consultancy if we could think of a way to convince peo-

ple they should pay consultancy fees to listen to us whine about pseudoscience and the need for solid evidence before accepting a claim as proven. Such as, for example, the claim that the Findhorn founders grew fantastically huge plants, herbs, and flowers by intuitively contacting the spirits of the plants. We don't wonder about the results, just the method.

### Plastic crosses

As Halloween grows in popularity every year, we suppose it's inevitable that more protests about the nature of the occasion will surface. Last year, the *Yorkshire Post* reported that the minister of a Leeds church wrote to Asda to complain about the supermarket's selling plastic crosses at its Pudsey store as part of its range of Halloween goods. The offence: that a symbol of faith should be turned into a toy. The store told the paper that it included the crosses in its range in the context of the many fables linking crosses with warding off vampires. But with cheap plastic? Maybe it's the vampires who should be offended.

### Playing the odds

The tabloid newspapers got very excited in mid-February when single mother Sharon Creighton told them that her £8.8 million lottery win had been predicted by a psychic. The story is less impressive than it sounds at first: Creighton noted that the psychic had given her this happy prediction in a letter that was probably a circular. In other words: a bulk mailing that might have included millions of folks predicted a big win for all of them, and was successful in one case. What were the odds on that?

### Acupuncture trials

You can see why people get frustrated with science: progress is so slow and contradictory. Like many complementary therapies, acupuncture has been criticized for a lack of supporting evidence. In 1989, when the British Medical Association released a survey of the many therapies, it concluded that in a small percentage of cases acupuncture seemed to be effective for managing pain.

The first of two recent studies was one of the bigger scientific trials of acupuncture, conducted by a research team from the US National Institute of Health. It concluded that acupuncture might be effective in helping provide pain relief and improving function for people with osteoarthritis of the knee. The study had 570 participants aged 50 or older who had significant knee pain but had not used steroids or other injections and had not had surgery within the previous six months. Participants were randomly assigned to one of three groups: acupuncture, sham acupuncture, and control.

Overall, the study concluded, those who received acupuncture had a 40 percent decrease in pain and a nearly 40 percent improvement in function.

A second, smaller, British trial of 124 patients between 18 and 80 published in the *Annals of Internal Medicine*, found that both sham and real acupuncture appeared to reduce neck pain.

These trials won't, of course, settle the matter. For one thing, in the second trial the same practitioner inserted the needles for both the sham and real groups.



Is it the practitioner or the needle locations? Only your acupuncturist knows for sure. Personally, we like aspirin, which seems to work no matter what.

### Unvisible Flying Objects

*India Daily* reported in mid-February that the Indian Defence Research and Development Organization has come up with a novel theory as to why we don't see thousands of UFOs around us all the time: they create an intense electromagnetic flux around them and we can't see through it. The flux, the article states, can be created either by "very advanced applications of superconductors" or "through spiritual concentration by any human being". So the DRDO guys are experimenting with a device they hope can see through this obfuscation. According to *India Daily*, dogs and cats can see energy levels beyond this flux, and are probably seeing UFOs all the time; they just can't tell us about them. Perhaps this explains that invisible mouse you thought your cat was chasing.

Thanks to this issue's clippings contributors: **Rachel Carthy, Sid Rodrigues, Steuart Campbell, Tom Ruffles, Ernest Jackson, the Wizard's Star List, Skeptic News, and Phil McKerracher.** The Skeptic would like to remind clippings contributors to use the magazine's current address, listed on p.3, rather than the old PO Box address, which has been phased out.

## Skeptic at large . . .

Wendy M Grossman



**IT SEEMS LIKE** every few years a rumour surfaces that long-time public atheist and academic philosopher Antony Flew, now 81, is recanting. The latest began in mid-December, when the Associated Press ran a story that created an improbable sensation: that Flew was not only recanting his atheism but also even cautiously adopting the creationist stance known as “Intelligent Design”. The story was picked up all over the world but most especially in the US, where creationism is a political football. Editorials from Pennsylvania to Seattle trumpeted the news.

It’s just one of those things: everyone gets excited when someone changes sides. The better known the person in question, the bigger the excitement. What is odd about the whole thing is that most of the time Flew is left alone to potter along writing his books. “I’ve never had a period in my whole life like this” Flew said when I called him to ask about the fuss, “and of course I never will again”. My talk with Flew had been commissioned by a respectable publication that shall remain nameless; then the piece got delayed and they decided that the *Sunday Times* had covered the subject sufficiently. The moment had passed.

To a large extent, of course, it was a fuss about nothing. Flew said his views have not changed that much. He has neither repudiated Darwinism nor had a sudden religious conversion. “I was never a dogmatic atheist who thought he knew there was no God, you know,” says Flew. “My position has always been that there has been no evidence giving reason to believe.” An agnostic, then, in the classical sense. Flew agreed that his position is and has always been more of the classical agnostic, but the term has become so abused he prefers not to use it. “I don’t like to say I’m agnostic because virtually everyone now would say that. A professional liar appointed by the Prime Minister would describe himself as an agnostic, and there’s no reason to believe he’s ever seriously considered the question, and that’s true of most intellectuals nowadays who would call themselves agnostics. It’s not a result of thinking about the matter.”

Flew’s fame as an atheist began in 1950, when he published a paper in the *Journal of Philosophy* called “Theology and Falsification”. In it, he noted that what David Hume called the “religious hypothesis” was neither, as he says now, “verifiable nor falsifiable by anything that happened in the universe”. It seems a modest enough insight, but the essay was widely reported at the time and has been reprinted more than 50 times around the world in many languages in the years since.

The recent flap came about in part because of com-

ments Flew made regarding a “change of mind” in several late 2004 publications relating to Darwinian evolution. “The change of mind basically starts from actually reading the final chapter of Darwin’s *Origin of Species*,” he says, “where he quite correctly pointed out that the whole theory for which he is famous begins with an incredibly complicated creature that has evolved by some other means to be capable of reproducing, though not always accurately.” In other words, there is a gap in the theory of evolution of a couple of million years – a tiny blip in the timeline, as Flew notes – in which the emergence of living matter proceeded much faster than the theory of evolution can account for. But saying that does not mean that Flew rejects Darwinian evolution or that he accepts Intelligent Design. It does not even mean he accepts a Christian or Islamic idea of God, a subject on which, he says, “I know more than the average”.

“I have been labouring to explain to anyone who’s interested that of course I have not come to think there is something wrong with Darwin’s theory. I am not a biologist, and I know no one who is who’s found anything wrong with the theory other than that period.” Meanwhile, he says, “Research workers don’t worry about it because they keep finding more evidence. It’s quite right for everyone to go on doing the research work that they can do”. Flew disagreed with me when I suggested it, but my theory continues to be that the reason his supposed conversion was grabbed at with such glee, at least in the US, is that he’s a pawn in the hot, political football that is creationism.

“I think there’s just a genuine interest in this,” he says, “though of course they don’t understand at all what it is that I believe.” Flew would be a pretty good catch. Not, maybe, as big as Richard Dawkins, but pretty good. Flew’s counterargument is, however, cogent: that lack of acceptance of evolution in the US is much larger than the number of active Christian believers there. “It’s a very odd phenomenon, this refusal to accept evolution when they don’t have a religious reason for doing so.”

The sad thing is that probably no amount of disclaimers from Flew will permanently kill the story. Probably now for years to come we’re going to be hearing, “Ah, well, but Flew recanted, you know”. And if we say he denied that claim, they’ll say we pressured him into it. Not, I suppose, that knowing this will stop us from rejoicing, in our turn, whenever we think a Big Psychic Fish has decided to admit it was all a scam and join the sceptics.



**Wendy M Grossman** is founder and former editor (twice) of *The Skeptic*, and author of *From Anarchy to Power: the Net Comes of Age*. Wendy M Grossman also writes for *Scientific American*. Her web site is at <http://www.pelicancrossing.net>.

# Why Creation Science Must be Taught in Schools

Tom Stafford and Andrew Brown argue that the best way to convey the nature of science is to produce examples of what it is not.

**CREATION SCIENCE IS** a model of how *not* to do science. It is an insult both to the scientific method and to any sensible understanding of the Christian *Bible*. Creation Science is dangerous, misleading and wrong. The best place for it is to be taught in science lessons.

Does this last sentiment surprise you? Perhaps you strongly disagree that the major alternative to Darwinian evolution should be allowed anywhere near children. In this article we hope to convince you that the best and most useful place for Creation Science *is* in classrooms – but used as an example to help illustrate the principles of the scientific method.

**Outright refusal to address the contentions of Creation Science can be used to the latter's advantage in suggesting that science is aloof, out of touch and oblivious to the requirements of most members of the public.**

Creation Science – the belief that the literal truth of the bible serves as an inerrant foundation for the sciences – is a relatively recent folly. The influence of the powerful Creationist lobby in America is well known, as are their legal attacks on the teaching of evolution. What is less well appreciated is the rise of Creationism in the UK. Funding and ideological contagion from abroad has been matched by native enthusiasm. Emmanuel College in Gateshead is the first of half a dozen evangelical educational institutions which are planned for the north east by an organisation called the Vardy Foundation.

News of the way science teaching has been distorted at Emmanuel College leaked out early last year. It was greeted by emotions ranging from despair to apoplexy from the UK science establishment. Notables such as Richard Dawkins have condemned outright the presence in science classes of biblically-based theories. But perhaps it is possible to turn the Creationists' insistence on a hearing in science lessons against them.

Out of hand rejection of a Creationist interpretation of biology, however valid, merely appears to justify their complaints of persecution by a dogmatic scientific orthodoxy. The success of Creation Science, in common with that of many other pseudosciences, relies on

a number of misconceptions about the nature of science. Not least of these is the portrayal of themselves as reasonable people raising valid questions which a fearful scientific elite are afraid to answer (rather than as the bunch of ideologically-led fundamentalists we know them to be). Outright refusal by orthodox science to address the contentions of Creation Science can be used



*God creating light: The belief that the literal truth of the bible serves as an inerrant foundation for the sciences is a relatively recent folly.*

to the latter's advantage in suggesting that science is aloof, out of touch and oblivious to the requirements of most members of the public for a spiritually fulfilling account of the world.

This misrepresentation relies in turn on another, deeper, fallacy about science, and one that is common in science teaching as well as many discussions of science in the media. This is the portrayal of science as primarily a body of facts to be explained, rather than as a process of comparing and testing theories. Presenting science as a body of facts – the speed of light, how vaccines work, the chemical composition of water, etc. – allows Creationism to present itself as a better theory than evolution by natural selection – because, they claim, Creationism can explain more facts.

The under-determination of theory by fact means

that any set of facts has an infinite number of possible explanations and, by implication, a set of facts that is only partially explained by one theory can be totally encompassed within another, separate, theory *if we are totally free to invent our theories merely to fit facts.*

What is more, try and argue with a Creationist and they will usually drag out an endless succession of facts, supposed facts, and speculation that brings evolution into question and present Creation Science as the solu-

process can be abused. The arguments put forward by the Creationist movement and the assumptions necessitated by such arguments are the perfect introduction to a number of crucial scientific concepts (see Box 1).

Such a drive towards explaining the process of science within the remit of school science lessons would be welcomed from a variety of perspectives. A heavily critical recent government report (*House of Commons Science and Technology Committee Third Report, 2002*),

#### Concepts that could be introduced with a consideration of Creation Science:

- *Scepticism*: all beliefs can and should be scrutinised.
- *The under-determination of theory by fact*: Many theories can fit a set of evidence
- *Parsimony*: The value of keeping theories simple.
- *Revisionism*: theories should be revised as knowledge increases.
- *Falsificationism*: the importance of constructing falsifiable theories, how to falsify a theory, and the dangers of non-falsifiable ones.
- *The Naturalistic fallacy*: truth is distinct from the way things ought to be, the way you would like them to be and from what some parts of society might regard as pleasant.
- *Peer review*: its importance in the accountability and transparency of science.
- *Replication*: its importance to reliability, validity and hypothetico-deductivity
- *Use of the word 'theory'*: difference between scientific and lay uses.
- *Confirmation bias*: the importance of seeking disconfirmatory evidence, and of not selectively attending to, or solely seeking, confirmatory evidence.
- *Progression*: the non-static nature of scientific theory, the ability of theories to account for new evidence as a criterion for judgement between theories, the history of science as that of competing theories.
- *A priori vs ad hoc explanation*: good theories account for evidence without needing arbitrary adjustment
- *The value of anomalies to science*: incompleteness of explanation is a strength of scientific theories, not a fatal flaw as Creationists might claim.

tion. Dealing with objections like these provokes an endless regression of quibble-chasing which proves little more than the difficulty of falsifying theories which are constructed *ad hoc* to account for contradictory evidence.

Countering the distortions of fact proposed by Creation Scientists is an important task, and is the ultimate basis upon which the final dismissal of Creationism as science must rest. However, we think you'll agree, most of us distrust Creation Science for more urgent and important reasons. Perhaps the main danger inherent in such microscopic consideration is that, to the layperson, science and Creation Science start to look like two competing bodies of facts rather than two fundamentally different ways of *thinking about* those facts and drawing conclusions from them. Creation Science violates nearly all the criteria which science uses to distinguish a good theory from a bad theory.

And this is the biggest shame about the exclusion of Creationism from science lessons; in Creation Science, scientists have under their noses a perfect model for teaching what science is and what it is not. One of the most effective ways of communicating the nature of the scientific process is to provide examples of how that

describes a series of serious flaws in current secondary education science programmes and identifies most of these as occurring at the key stage 4 level (the two GCSE years). Specifically,

what is important is not that citizens should be able to remember and recall solely a large body of scientific facts, but that they should understand how science works and how it is based on the analysis and interpretation of evidence. Crucially, citizens should be able to use their understanding of science, so that science can help rather than scare them. (p. 60).

It would seem, then, that the government, after consulting with teachers and pupils, would agree that the science curriculum is crying out for a greater consideration of what scientific thinking *is*. There is great potential here for science teaching to get across the excitement of science as a process, and a way of thinking, rather than as a body of dry facts. Interestingly, there seems to be scope *within* the existing curriculum as it stands for a substantial 'philosophy of science' component (see Box 2)

Such curriculum areas seem tailored to a consideration of how *not* to do science as evidenced by the Creationist model. Such a pursuit also more than fulfils the government's recommendations that science teaching should be grounded in 'real world' matters to engage pupil's interest and encourage independent thought. In a world in which, in one of the first cases of Creationist court action, a blueberry farmer and a clergyman attempted to force the cornerstone of most of modern science out of the classrooms of the most pow-

erful nation on Earth, critical thinking skills are one of the most valuable set of abilities that the education system can bestow.

it to illustrate the difference between science and pseudoscience. The creation/evolution debate provides an engaging route into the philosophy of science. This in turn can make science teaching more profound than the teaching of an ossified body of facts.

Teaching Creation Science in schools, if done correctly, would inoculate pupils against the manipulative propaganda of creationists. This is surely a better tactic than trying to prevent them from hearing about it in the first place. To try to ban Creation Science in entirety

### Room for the consideration of Creation Science within the current UK science curriculum:

*At key stage 3 (11-14 years), pupils should currently be taught:*

- about the interplay between empirical questions, evidence and scientific explanations using historical and contemporary examples,
- that it is important to test explanations by using them to make predictions and by seeing if evidence matches the predictions,
- about the ways in which scientists work today and how they worked in the past, including the roles of experimentation, evidence and creative thought in the development of scientific ideas.

*At key stage 4 (14-16 years), pupils:*

- see how scientists work together to develop new ideas, how new theories may, at first, give rise to controversy and how social and cultural contexts may affect the extent to which theories are accepted.

*They are taught:*

- how scientific ideas are presented, evaluated and disseminated (for example, by publication, review by other scientists),
- how scientific controversies can arise from different ways of interpreting empirical evidence (for example, Darwin's theory of evolution),
- ways in which scientific work may be affected by the contexts in which it takes place (for example, social, historical, moral, spiritual), and how these contexts may affect whether or not ideas are accepted,
- to consider the power and limitations of science in addressing industrial, social and environmental questions, including the kinds of questions science can and cannot answer, uncertainties in scientific knowledge, and the ethical issues involved.

erful nation on Earth, critical thinking skills are one of the most valuable set of abilities that the education system can bestow.

According to a MORI poll (MORI & Science Media Centre, 2002), 71% of the public currently expect to receive an "agreed view" about scientific matters from scientists, and 61% expect science to provide "100% guarantees" about the safety of medicines. Such unrealistic expectations stem almost completely from a basic lack of understanding of the scientific method. Addressing this ignorance within the school curriculum would serve society well; this is where Creation Science could be usefully employed in the classroom.

An alternative to open hostility to creationism, then, is to invite it in to the classroom with the aim of using

merely fuels the conspiracy theory claims that the truth is being suppressed. The scientific method provides a radically more sophisticated way of thinking about truth than creationism, and fair consideration of the two side-by-side can reveal this.

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Tom Stafford has a PhD in Cognitive Neuroscience from the University of Sheffield. He currently works for the BBC as a science researcher. Andrew Brown is currently reading for a PhD in infant memory at the University of Sheffield. They can be contacted at [tom@ididlect.org.uk](mailto:tom@ididlect.org.uk) and [Andrew.Brown@sheffield.ac.uk](mailto:Andrew.Brown@sheffield.ac.uk), respectively.

# The Angels of Mons and Elsewhere

## Part Two: Even More Tales of Supernatural Rescue

Scott Wood completes his assessment of the 'making of myths'

### Russians and Terrorists

NONE OF THE mythmaking that took place during the First World War was new or unique. Another rumour that multiplied during the war was the story of Russian soldiers being transported, late at night, from Scotland to the southeast of England to fight at the front. Unnamed commuters would report seeing train carriages full of fierce, furry-hat-wearing men, with snow on their boots, on their way to the front to overwhelm the Germans. History proved this rumour to be false (Terraine, 1980).

After the destruction of the World Trade Centre, a piece of urban folklore sprang up expressing British and American anxiety about possible Muslim terrorists walking among them. A 'friend of a friend' (foaf) helps an Arabic or Asian stranger who is short of money in a supermarket queue (£1 Birmingham, £3 in London). The stranger thanks them and rewards them with some advice. The 'foaf' should not use the London Underground or go into Birmingham town centre. This story was repeated featuring Coventry, Tamworth, Milton Keynes and Chester (Mikkelson, 2002a).

In American versions the warning is "Don't drink Coke this summer", or after "June 1<sup>st</sup> 2002" (Mikkelson & Mikkelson, 2002). Or an American girl whose Afghan boyfriend disappeared on September 11<sup>th</sup> 2001 is left a letter begging her not to fly on that day and to keep away from shopping malls the following Halloween (Mikkelson, 2002b).

### Men in White

The Angels of Mons, as they emerged during and after 1915 and in numerous books afterwards, are a folktale. They are more dazzling than snowy Russians or helpful terrorists, but an urban legend all the same. In all accounts the BEF, fighting on the side of God, King and Country, are about to be wiped out by a greater force of supposedly godless Germans. At a crucial moment a shining white figure, or figures, appears between them causing the Germans to either flee in terror or hesitate in confusion. The British use this to escape or rally enough to fight back successfully. Often in the story a captured German, usually an officer, would either ask the identity of the invincible figure in white or simply know that they had been beaten by angels.

This contrasts with *The Bowmen* and the Rudyard Kipling story *The Lost Legion*, which Machen based *The Bowmen* on. In both, soldiers are aided in their time of need by supernatural entities that kill the opposition.

There is no mass vision or enquiring enemy; the only person to see the bowmen is the delirious Latin scholar. One exception is the account in *The Universe* on 30 April 1915 which does describe supernaturally inflicted death (see Part One), but this is the first known Mons account and the most influenced by *The Bowmen*. There were no woundless Germans dead at Mons, so the story survived because of the move from dead Germans to scared ones. Through this process the Angels of Mons came to resemble, or show the influence of, stories from elsewhere. During the Angels of Mons debate a letter appeared in *The Daily Mail* on the 7 August 1915 from Lionel Edwards of Little Leigh Vicarage, Northwich. The letter suggested that events at Mons were not so surprising, as similar events had

**There is no mass vision or enquiring enemy; the only person to see the bowmen is the delirious Latin scholar**

taken place before. It contained two stories, the first describing the besieged British Embassy in China during the Boxer rebellion. To get to safety the British had to risk coming into view of the Boxer snipers. At the crucial moment the snipers did not fire. When captured rebels were later asked why they did not shoot they said, as did the apocryphal captured Germans, that they were afraid of the people in white between them and the British. The second story tells of an Australian priest giving the last rites to a condemned prisoner. The prisoner claimed to have seen the priest many years ago riding alone through the bush and decided to murder and rob him. He was prevented by the "companions in white who rode either side" of the priest, who remembered being in the area on that date.

When Attila the Hun met Pope Leo I at the city gates of Rome, St Peter and St Paul appeared either side of Leo, threatening Attila with instant death if he attacked the holy city. Attila withdrew. When St Francis Xavier met the Badagars, who intended to kill Xavier and destroy the Christians of Traunancor and Comorinum, he was accompanied by a "terrible giant" with lightning in his eyes, who caused the Badagars to retreat (Brewer, 1884).

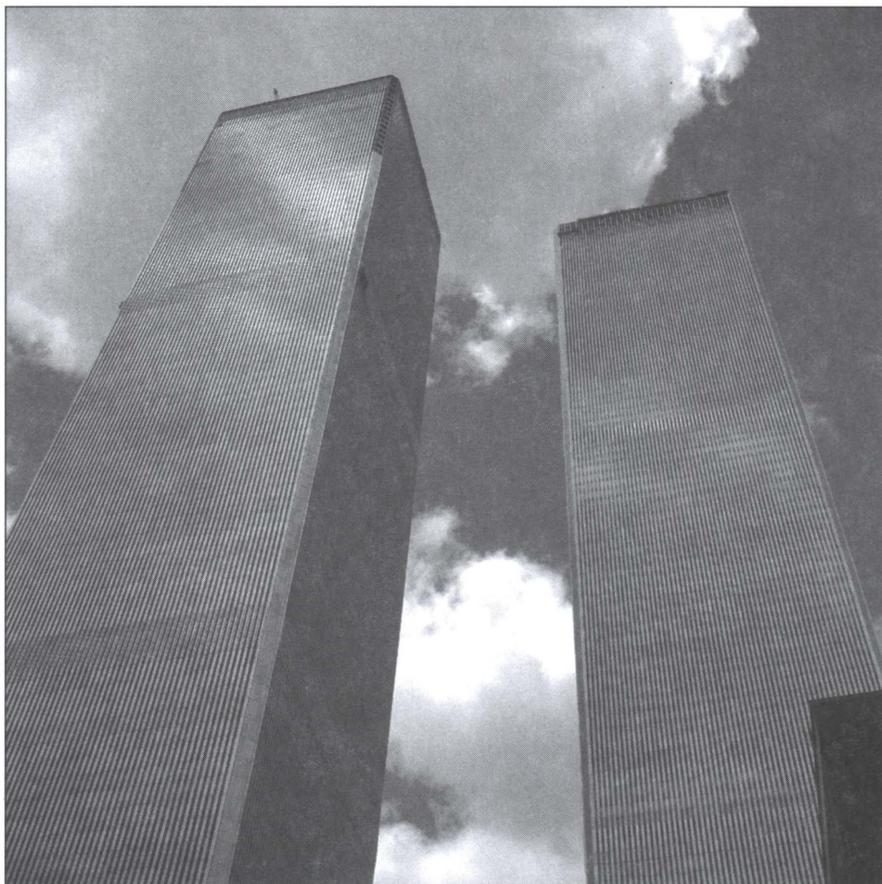
China is the venue of angelic intervention in a story repeated by Hope Price in *Angels*. A city is being looted by a lawless Chinese army, also threatening a missionary compound. A missionary soothes her comrades with Psalm 91:5 and the next day many non-Christians arrive at the mission to ask who their protectors were. The Missionary hears of four tall, non-Chinese (of course) soldiers guarding the mission compound. They were said to have “shone” (Price, 1994, pp. 166-167).

Missionary Sudar Singh was saved in the same way when cornered in a cave by Tibetan villagers angry with

named Francisco de Morla, mounted on a chestnut horse, and fighting strenuously in the very place St Iago is said to have appeared.” (Scott, 2001, p. 15).

### Save the Children

Another Saint to intervene during warfare is Padre (now Saint) Pio. This legend is of interest for two reasons. Firstly, it is a post-Mons account of divine intervention and the attackers driven away were, ultimately, on the winning side. The basic motifs are still the same. During World War Two the American air force were



Following the attack on the World Trade Centre on 11 September 2001, a number of urban legends sprang up expressing British and American anxiety about possible further attacks by Muslim terrorists.

his preaching. They stood at the mouth of the cave, calling to Singh to tell them who the men were who were guarding him. Singh could see no one (Schlink, 1985). The astrally-projected spirit of a tribal medicine man was repelled by “strong men in white” when it was sent to trouble another missionary (Schlink, 1985, p. 115).

Saints, as well as angels, have aided outnumbered Christians before the retreat at Mons. Sir Walter Scott, in his *Letters on Demonology and Witchcraft* recounts the story of Cortez battling against extreme odds during the conquest of Mexico. St Iago was said to appear at the front of the Spanish on a white horse to lead them on to victory. Scott’s source, *Historia Verdadera* by Don Bernal Dias del Castillo, reports a witness remembering: “[N]ay, that he beheld an individual cavalier,

bombing the towns of southern Italy with the exception of San Giovanni. A sky-born apparition of a monk with upheld hands was appearing to the American pilots and a ‘force field’ was stopping any bombs hitting the town. An unnamed American Commanding General, who had seen the vision, went to the town after the war to investigate and meet Padre Pio at a monastery. He recognised Pio as the air-borne monk who had protected San Giovanni, and just as non-religious men were changed after seeing the Angels of Mons, the General knelt before Pio and converted to Catholicism soon afterwards (Day, 2002).

Another branch of this myth substitutes embattled Christian men with children. The book *Angels A to Z* repeats two incidents of angelic intervention that took place after Mons (Merta, 1996). There is the possibility of a kind of narrative contamination from the Mons legends but I feel there are enough pre-20<sup>th</sup> century predecessors, St Iago in Mexico, Attila at the gates of Rome and St Francis Xavier being three examples, to demonstrate that all

these stories have a common root far older than Arthur Machen’s story in *London Evening News*.

The first is during the Second World War in Danzig, East Prussia (now Gdansk, Poland). A group of children are sheltering in a schoolhouse from Russian shelling. One of the children who, like many of the angel witnesses, is not a Christian, says “It came up to here on them” to a nurse while tapping his breastbone. When asked what he meant, the boy described men who were standing at every corner of the building, ablaze with light and so tall the gutters of the roof came up to their chests.

The second account describes missionary children trapped during the Jeunesse Rebellion in the Congo as rebel troops advance on their school. The rebels spend three days advancing, then inexplicably retreating and,

of course, when a wounded rebel is captured, he tells of hundreds of soldiers dressed in white, protecting the compound that contained the school (Merta, 1996).

There is at least one earlier version of this story. In Kendal, Cumbria in 1745, Highland raiders are prevented from seizing a child they find playing on the floor of an inn parlour by an angel who drives them away. The event is said to have given the Angel Inn of Kendal its name (Findler, 1984).

Inevitably a version appears in one Mons account. A member of the British Expeditionary Force rescues a child from the Germans. A nurse asks him how he did it, he replies:

“How did you manage to pick up the child from under the German guns?” I asked. [...] “It was a kind of Golden cloud between us and the Germans and a man on a big horse – and then I saw the child in the dust by the roadside, and picked it up.” “Yes sister,” he added, “Lots of the other chaps saw it too.” There was a murmur of confirmation. “The minute I saw it,” he continued, “I knew we were going to win. It fair bucked me up.” (McClure, 1983, p. 9)

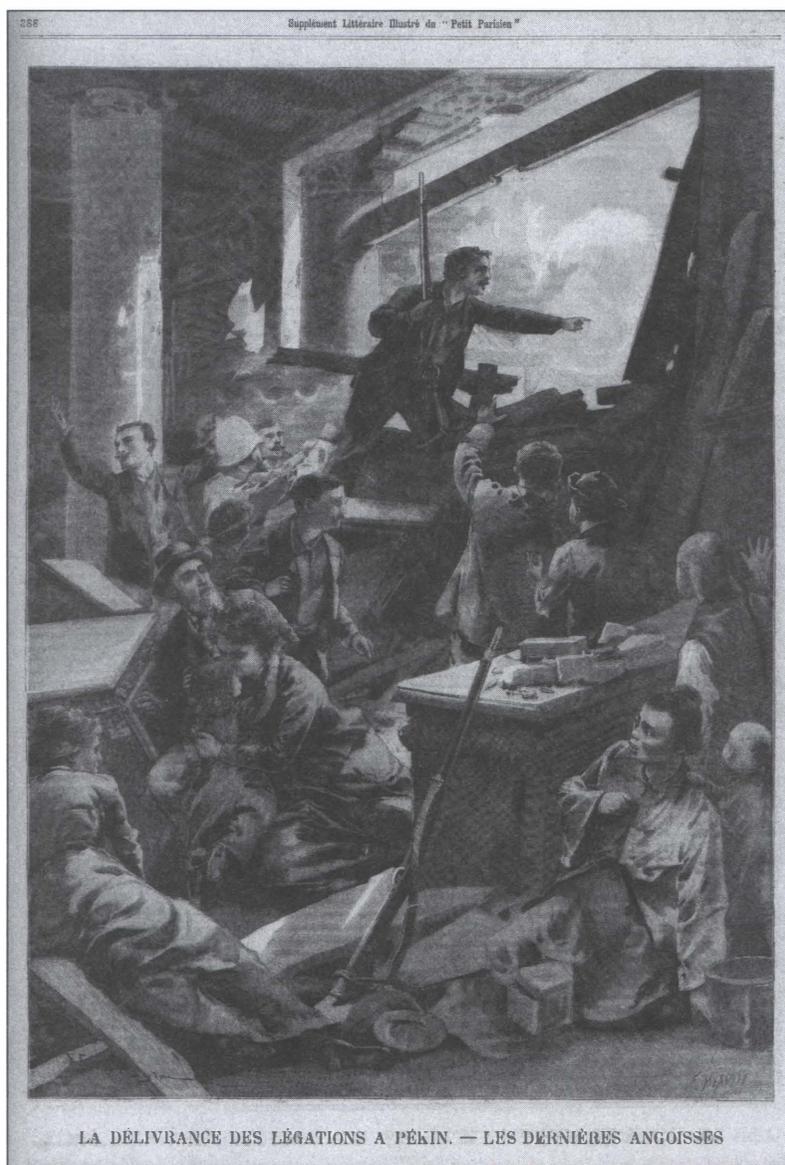
Angels intervene in the *Bible*, Exodus 14:19. Just before the Red Sea is parted, the fleeing Israelites are saved by the Angel of God within a glowing cloud that “lit up the night” coming between them and Pharaoh’s army. As with some British troops who reach their wits end at Mons, in Exodus 14:11 the Israelites ask Moses, “Was it because there were no graves in Egypt that you have taken us away to die in the wilderness?” as Pharaoh’s cavalry bears down on them. In 2 Maccabees 3:254-26 the Temple is saved from a rampaging mob in the familiar way. “For there appeared to them a magnificently caparisoned horse, with rider of frightening mien; [...] its rider was seen to have armour and weapons of gold.” The mob fall back in terror, and two further defenders sent by the “Sovereign of Spirits” appear and flog the leader of the mob.

It is clear to me that the Angels of Mons follows the same pattern as all of the examples above. Outnumbered Christians escape certain harm by divine intervention. Often the events are backed by an enquiry into the supernatural events from the attackers. After some shifting from the initial accounts, inspired by visions in the field or *The Bowmen* or both, the shape the Mons stories settled into is one of established Christian folklore.

## Elsewhere

Do not let it be thought that these stories are exclusively Judeo-Christian, however. While the motif of the enemy fleeing in fear or confusion without engaging the supernatural Guardians is an element of the Christian version of the story, there are parallels in other faiths and myths.

The first major victory in the campaigns led by Muhammad was won at Bedhr, when the greatly out-



*Did angels intervene to protect the British during the Boxer Rebellion?*

numbered Muslims were joined in their battle against the Meccans by the angel Gabriel leading an army of angels. Two observers on a hill heard the angels’ stallions neigh as they swept past and saw them moving in a cloud. One of the men died of fright on the spot (Glassé, 1989, pp. 66-67).

No doubt evolving from the Bible stories but with a Celtic influence is the folktale of the Faery Flag of the MacLeods. A battle between the MacLeods and MacDonaldis is going badly for the MacLeods until the flag is waved and it seems as if their numbers are

greatly reinforced, and the MacDonalds faltered and fell back (Wilson, 1971, p. 71). Gerald B. Gardner tells a similar story about a battle on the Isle of Man (Gardner, 1975, p. 64).

The 14<sup>th</sup> of August 1915 issue of *Light* carried a de-Christianised version of the white rider myth in its *Sidelights* section:

We observe that the ghost of the celebrated General Skobelev, who made so great a mark in the Russo-Turkish war of 1877, is reported in a telegram [...] to have been seen of late by many Russian sentries. The apparition appeared clad in a white uniform and riding a horse. According to an exchange its appearance is stated by tradition to mark always a critical moment for the armies of the Czar, and to cause invariable panic in the enemies ranks.

Further back than the visions of St Iago in Mexico, St George at Carthage, and Mons and General Skobelev, is the story of twin gods Castor and Pollux, appearing before Roman soldiers at the Battle of Lake Regillus in 496 BC. The horse-riding Dioscuri, as they were known in Greece, led the Romans to victory against the Etruscan Tarquins and became patrons of the Roman cavalry (Grant, 1996).

In 174 AD, another Roman force, trapped, thirsty, tired and greatly outnumbered, were given water by divine intervention, restoring them sufficiently to gain victory. The miracle was ascribed to both Mercury and later to the Christian God, the pagan version requesting the miracle *via* an Egyptian magician, the Christian by prayer (Mullin, 1978).

The *Iliad*, like the *Bible*, contains a number of divine interventions. Athene directs an arrow fired at Menelaus toward his metal belt, though the bolt still floors him. Apollo hides Prince Hector and Agenor from Achilles in a golden cloud and a cloud of smoke respectively, while Poseidon spreads a mist before Achilles' eyes and takes Aeneas to safety (Homer, 1950).

Artemis is a Greek hunter goddess who appears in the *Iliad*, though her origins disappear into pre-history. In *The Encyclopaedia of Religion* she is described in a way that sounds very much like the Angels of Mons and their kin:

Artemis does not fight; she guides and she saves, she is Artemis Hegemone ('ruler') and Artemis Soteira ('saviour'). She is invoked as rescuer in critical situations when a city is threatened with complete destruction. Artemis prepares for action when war goes beyond the civilised rules of combat and veers in the direction of savagery. In these extreme cases the goddess does not resort to physical or martial force, but uses supernatural means to upset the

game. To some she brings blindness, leading them in out-of-the-way paths, while others she gives a sort of hyper-lucidity, guiding them miraculously through darkness or illuminating their minds with sudden inspiration.

I do not think the original story of these supernatural saviours will be identified. The story clearly goes back thousands of years and has been adapted by numerous cultures and creeds. The angels, saints, gods and goddesses act by causing confusion, terror and sudden courage, by bringing down smoke clouds and bright lights. Their perceived actions are really what happens in a battle and what happens in the human mind during that battle. It is in the chance, chaos, smoke, flames and visions of humanity and humanity's environment that we see the faces of the divine and build our stories around them, stories that spread, grow and evolve according to human time and place.

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## Skeptical Stats

1. Number of changes in the *National Geographic* Atlas between 2000 and 2005 : **17,000**
2. Number of mobile phones left in London cabs in the last six months of 2004: **63,135**
3. Percentage of those mobile phones later returned to their owners: **80**
4. Amount the BBC spends per month on taxis: **£1 million**
5. Number of American households bankrupted by medical problems in 2001: **700,000**
6. Fraction that had health insurance when the illness began: **About three-quarters**
7. Percentage of US police car chases that end in a crash: **40**
8. Percentage of those car chases that relate to misdemeanours: **90**
9. Date on which Pope John Paul II beatified Anne Catherine Emmerich: **October 3, 2004**
10. Date of release of *The Passion of the Christ*, the Mel Gibson movie based on Emmerich's "visions": **February 24, 2004**
11. Percentage of the world's food crops that are irrigated with sewage: **about 10**
12. Cost of attending a seminar on the risks of MMR vaccine run by the company What Doctors Don't Tell You: **£40**
13. Number of adults in Britain who are overweight or obese: **24 million**
14. Number of adults in Britain who were obese in 1980: **2.5 million**
15. Number of "alternative" practitioners thought to be practicing in the UK: **40,000**
16. Percentage of the British population thought to use "alternative" therapies in any given year: **25**
17. Number of small metal egg-shaped objects Uri Geller claims was given to him by John Lennon, who was given it by aliens: **1**
18. Number of houses in the Adalusian village Belmez de la Moraleda in which faces appear in concrete floors: **2**
19. Number of ghosts reported as regularly seen at Burton Constable Hall: **at least half a dozen**
20. Number of those ghosts that is said to be that of a dog: **1**
21. Percentage of American voters on Election Day 2004 who believed that the US was safer now than before September 11, 2001: **54**
22. Cost of a one-hour astrology and Tarot reading in London's Cecil Court: **£45**
23. Number of pulses to be found in each wrist according to Chinese medicine: **12**
24. Number of different types of acupuncture needles: **9**
25. Number of supplements inventor and computer scientist Ray Kurzweil takes every day in his quest for immortality: **250**

### Sources

1 [http://news.nationalgeographic.com/news/2004/11/1119\\_041119\\_atlas.html](http://news.nationalgeographic.com/news/2004/11/1119_041119_atlas.html); 2,3 Survey by Pointsec ([http://www.pointsec.com/news/news\\_pressrelease.asp?PressID=2005\\_January\\_24Nop](http://www.pointsec.com/news/news_pressrelease.asp?PressID=2005_January_24Nop)); 4 *Ariel* (BBC in-house magazine); 5,6 *Health Affairs Journal* 10.1377/hlthaff.w5.63 (<http://content.healthaffairs.org/cgi/content/abstract/hlthaff.w5.63v1>); 7,8 ABC News; 9,10 various; 11 *Harper's*; 12 *The Times*; 13,14 "Choosing Health: making healthier choices easier," Department of Health white paper, November 16, 2004; 15,16 *Guardian*; 17 Uri Geller, writing in the *Sunday Telegraph*; 18 *The Times*; 19,20 *Hull Daily Mail R&R*; 21 *The New Yorker*; 22 sign in Watkins window; 23,24 *The Times*; 25 Associated Press

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# An Anaesthesiologist Examines the Pam Reynolds Story Part Two: The Experience

Gerry Woerlee suggests a very non-paranormal explanation for near-death experiences on the operating table

**I WILL BEGIN** with the effects of anaesthesia on the body of Pam Reynolds. She underwent a major neurosurgical procedure in 1991. I have considerable experience of neurosurgical anaesthesia, and the technique of anaesthesia in all Western countries at this time was very standard. Pam would have undergone a standardised form of balanced anaesthesia with three different types of drugs – a technique that is still in use today.

*Sleep-inducing and sleep-maintaining drugs:* These may be the same or different drugs. After injecting a short-acting drug to induce unconsciousness, other drugs are administered to keep the patient asleep, or a continuous infusion of the same sleep-inducing drug could be used.

**A person undergoing such a technique of anaesthesia does not breathe, does not move, looks and feels 'absent' – such a person at that moment is no more than a biological mechanism undergoing repair by a surgeon**

*Powerful pain-killing drugs:* Sleep does not mean a person does not feel, or react to pain – so powerful pain-killing drugs are administered to reduce involuntary nervous system responses to pain.

*Muscle-paralysing drugs similar to curare (deadly Amazon Indian arrow poison):* Persons rendered unconscious, and who have been administered powerful pain-killing drugs at dosages sufficient to prevent bodily nervous system responses to pain, are in a particular medical condition; they do not breathe because of the combined effects of the sleep-inducing and the pain-killing drugs. Pain-killing drugs cause their muscles to stiffen, rendering even the remaining breathing insufficient. Furthermore, this combination of drugs still does not prevent bothersome reflex movements in response to pain. All these effects can be eliminated by paralysing every body muscle of these patients with curare-like drugs. This makes the work of the surgeon easier, and in some situations even possible when it would otherwise not be.

There is only one problem with such a combination of drugs: breathing stops totally. So the standard technique is to pass a 1-2 centimetre diameter tube through

the mouth, through the vocal cords into the trachea (windpipe). An inflatable cuff around the tube within the windpipe ensures an airtight fit, and this tube is connected to a machine called a ventilator which performs the act of breathing for the patient. This is a perfectly normal and standard anaesthetic technique employed for many millions of operations all over the world each year. A person undergoing such a technique of anaesthesia does not breathe, does not move, looks and feels 'absent' – such a person at that moment is no more than a biological mechanism undergoing repair by a surgeon. It is the task of the anaesthesiologist to induce and to maintain this situation until the surgeon is ready, as well as to keep the patient alive in spite of all the effects of the operation performed by the surgeon.

Sometimes the concentration of sleep-inducing drugs within the bodies of patients undergoing such a form of anaesthesia is insufficient to maintain unconsciousness. So these people are awake – they hear what is going on around them, they feel the touch of the surgeon and others, and if their eyes are open, they actually see what is happening. But because of the powerful pain-killing drugs they feel no pain, and because of the muscle-paralysing drugs they cannot move, speak, or breathe. They lie still and unmoving while observing all that happens to them and around them. Subsequently, after recovering the ability to speak, they can give very detailed reports of what happened to their bodies and about their bodies during their periods of awareness. This may sound amazing to some people, but everyone can test for themselves the quality of observations made by a person lying still with their eyes shut. Lie blindfolded on a bed. In such a situation you can quite clearly visualise what people are doing and saying in your immediate surroundings, as well as clearly visualise what is happening to your body. This is the situation in which Pam Reynolds found herself when she awoke at the beginning of her operation.

There is another fact that all students of the experience of Pam Reynolds should realise and understand with great clarity. Pam Reynolds could tell no-one about her experience until after the tube was removed from her windpipe after she awoke in the recovery room subsequent to the successful completion of her operation. During the period of anaesthesia and operation, until after the tube was removed from her windpipe, she could not speak. So her report of her experiences was a report of remembered experiences. This does not mean she did not undergo these experiences, simply that she had time to process and associate her sensations and experiences with her existing knowledge



*Pam Reynolds is one of hundreds of people who claim to have witnessed their own operations from a vantage point near the ceiling*

and expectations. An experience reported at the time it is undergone is sometimes quite different from a remembered report of the same experience. Furthermore, the mental processes of Pam Reynolds were certainly affected by the pain-killing and sleep-inducing drugs when she underwent these experiences. After all, she was conscious during her experience, but felt calm, and felt no pain due to the operation – facts proving that her mental processes were affected by anaesthetic drugs during her experience. So an examination of the details of her experience reveals observational facts mixed together with the effects of the anaesthetic drugs, her own expectations and extrapolations, all welded together into a coherent and wonderful story. Knowing these things gives background and perspective to her story, making it possible to begin with a step by step analysis.

Pam Reynolds was first put under anaesthesia, and the positioning and preparation of her anaesthetised body for surgery was commenced. This can sometimes be a time-consuming procedure for neurosurgical operations, but here there was also the necessity to prepare her for cardiopulmonary bypass. During this long preparation time, the effects of muscle-paralysing, pain-killing drugs, and sleep-inducing and maintaining drugs can decrease below what is needed to maintain sleep. Regular doses of these drugs need to be adminis-

tered to maintain sleep, total muscle paralysis, and adequate pain treatment.

I commenced my career in anaesthesiology as a junior resident in 1977, and have seen medicines, techniques, and fads come and go. So the fact that Pentothal was used as a sleep-inducing drug for the anaesthesia of Pam Reynolds during 1991 indicates to me that the anaesthesiologist used a perfectly standard combination of anaesthetic drugs for that time. I used exactly the same drug combinations at that time too. The dosage of Pentothal used by anaesthesiologists to induce sleep keeps people asleep for about 5-15 minutes, after which sleep is maintained with other gases in the mixture of air pumped into the lungs by the ventilator. Her anaesthesiologist would have maintained sleep with nitrous oxide (laughing gas), perhaps together with a vapour such as isoflurane or enflurane which were in common use at that time. But Pam Reynolds was conscious at various times during her operation, indicating to me that neither isoflurane nor enflurane vapours were used to keep her unconscious.

The neurosurgeon began first. He made an incision in her head, and then began to saw the bone of her skull open with a pneumatic saw shaped like an electric toothbrush. The high pitched whining of the idling motor of this saw caused Pam Reynolds to awaken – this was the “natural-D” that she heard. She was awake

but partially paralysed due to muscle paralyzing drugs, and had a tube in her windpipe. So she could neither move nor speak. The powerful pain-killing drugs ensured she felt no pain, she heard people speaking and moving around her, she felt the touch and movements of the surgeons on and in her body, and she registered all these things in her mind. The effects of anaesthetic drugs caused her to feel calm. Malfunction of her brain caused by these same drugs, possible reflex minuscule twitching of her limb muscles, together with abnormal functioning of her muscle spindles induced the out-of-body experience. Chapters 10, 11, and 12 of *Mortal Minds* contains a detailed discussion of the physiology of out-of-body experiences, including those occurring under anaesthesia (Woerlee, 2003; see also Blanke *et al.*, 2004).

### **An experience reported at the time it is undergone is sometimes quite different from a remembered report of the same experience**

The usual monitoring of her vital signs was used by the anaesthesiologist, in addition to which her electroencephalogram was monitored, as well as the response of her brain to clicking sounds in two earplugs (VEP = vestibular evoked potentials). (N.B. VEP measurement is a very useful indication of the depth of anaesthesia and the level of consciousness.) Some authors make much of the fact that she could hear everything, in spite of the fact she had earplugs feeding clicking sounds into her ears. My reaction to this is that of course she could hear what happened about her – proof of this is seen all about us. There are simply enormous numbers of people all around the world, wandering around, listening to loud music played through earplugs, who at the same time are able to hear and understand all that happens in their surroundings. And people under anaesthesia can hear things; otherwise this perfectly standard VEP monitoring technique would be useless as a measure of the depth of anaesthesia. So being able to hear, despite the insertion of earphones making clicking sounds, is nothing wondrous.

Some people also make much of the fact that the VEP monitoring did not signal that she was conscious. The truth about all monitoring such as VEPs, is that while such monitoring is generally very accurate, it is not 100% accurate. This is realised and appreciated by all experienced anaesthesiologists, who understand and must work with this humbling fact. So they always keep a sharp eye on their patients for other signs of awakening.

The story of Pam Reynolds also provides features allowing precise timing of some events. For example, the time of one period of awareness was given very accurately by what she heard one of the surgeons saying:

“Someone said something about my veins and arteries being very small. I believe it was a

female voice and that it was Dr. Murray, but I’m not sure. She was the cardiologist. I remember thinking that I should have told her about that ...” (Sabom, 1998)

She was not on cardiac bypass at the time of her out-of-body experience, because the cardiothoracic surgeon was having trouble introducing the cardiac bypass machine tubing into the blood vessels of her right groin – the blood vessels in her right groin were too small for the size of the tubing and the blood flow needed for cardiac bypass. This means the cardiac bypass apparatus was not even connected to her body at this time. The cardiothoracic surgeon eventually used the blood vessels in her left groin. So at that time, Pam Reynolds had a normal heartbeat and body temperature, as well as the normal responses of a paralyzed person who was awake while supposedly under general anaesthesia.

Then we come to Pam Reynolds’ description of the pneumatic saw she observed during her out-of-body experience. Here again, it cannot be emphasized enough that her description of this episode was a description of a remembered event. After all, she could not describe these things at the time they occurred. Furthermore, she knew no-one would use a large chain saw or industrial angle cutter to cut the bones of her skull open. She was 35 years old in 1991, the year of her operation. This means she was born in 1956, meaning she was a member of a generation of Americans blessed with excellent dental care. Pneumatic dental drills with the same shapes, and making similar sounds as the pneumatic saw used to cut her skull open, were in common use during the late 1970s and 1980s. Because she was born in 1956, a generation whose members almost invariably have many fillings, Pam Reynolds almost certainly had fillings or other dental work, and would have been very familiar with the dental drills. So the high frequency sound of the idling, air-driven motor of the pneumatic saw, together with the subsequent sensations of her skull being sawn open, would certainly have aroused imagery of apparatus similar to dental drills in her mind when she finally recounted her remembered sensations. There is another aspect to her remembered sensations – Pam Reynolds may have seen, or heard of, these things before her operation. All these things indicate how she could give a reasonable description of the pneumatic saw after awakening and recovering the ability to speak.

Pam Reynolds’ mental processes were certainly affected by the anaesthetic drugs coursing through her body. This is proven by her absence of pain sensation during her operation, together with her sensations of mental calm. And while her mind was under the influence of these drugs, she described her mental state as more awake and aware than normal, with better than normal sensations. But her statement is no more than a typical statement made by a person whose brain is affected by medications, toxins, body waste products, or the effects of oxygen starvation. Observers see that the mental processes of such people are foggy, clouded,



*Pam Reynolds almost certainly had fillings or other dental work, and would have been very familiar with the dental drills used.*

illogical, and disoriented – yet those affected by medications, toxins, body waste products, or oxygen starvation feel their thoughts and mental processes are clearer, that their minds function better, and that their perceptions are more acute than normal. In fact, they often feel wonderful. The mental effects of the anaesthetic drugs used on Pam Reynolds are similar to those of oxygen starvation:

Hypoxia (oxygen starvation) quickly affects the higher centers, causing a blunting of the finer sensibilities and a loss of sense of judgement and of self-criticism. The subject feels, however, that his mind is not only quite clear, but unusually keen. (Liere & Stickney, 1963)

This is why Pam Reynolds experienced her mental processes as better than normal, even though no-one else would say they were normal.

After exposure of the aneurysm, she was put on cardiac bypass and subjected to hypothermic cardiac arrest (her body temperature was lowered and her heartbeat was stopped). Her body temperature was lowered to

15° Celsius (60° Fahrenheit). This is a temperature at which all people are unconscious. So she was unconscious, and could therefore have no conscious experience during this period. Even so, she was able to remember some of what happened before her period of hypothermic cardiac arrest, because she was able to remember her “out-of-body experience” prior to the period of cardiac arrest.

Many people may consider this technique of hypothermic cardiac arrest as a wonderful and unusual technique. Yet it was one of several standard techniques for performing open heart surgery during the 1960s and the 1970s. If the body and brain are cooled to 15° Celsius and lower, it is possible to stop the heart and breathing, perform the necessary surgery, subsequently re-warm the patient, restore normal heartbeat, and the patient will suffer no brain damage, provided the duration of cardiac arrest is less than 45 minutes. The fact that the brain cooled to a temperature of 15° Celsius can survive a period of absent circulation for 45 minutes is not miraculous. Cooling reduces the speed of all chemical reactions, enormously reducing the metabolism of the brain and body, enormously reducing the requirement of the brain and body for oxygen and

nutrients. This is a situation similar to keeping meat in a refrigerator – the cooler the refrigerator, the better the meat is preserved.

Was Pam Reynolds 'dead' during the period her heart was stopped? Very definitely not! Her body metabolism had simply been reduced to a minimal level. After all, cessation of breathing and cessation of heartbeat are manifestations of death, but are not death. True death is irreversible failure of all brainstem functions. For example, heart-lung bypass is a situation where people do not breathe and have no heartbeat, yet are very much alive, and may even be conscious (Woerlee, 2003, see chapter 2).

After successful removal of the aneurysm, the body temperature of Pam Reynolds was gradually increased to normal, and her heartbeat was restored. Blood flow and brain function returned during this period. Nonetheless, even though brain function was restored, Pam Reynolds' brain did not immediately return to normal function. To begin with, her brainstem function recovered enough to restore consciousness – otherwise she could not have consciously perceived the dark vortex through which she passed to undergo a typically American near-death experience (NDE) during which she was guided and aided by deceased relatives (Osís & Haraldsson, 1986). Furthermore, the visionary content of her NDE was a product of her knowledge that the operation could possibly cause her death. I say this because during her NDE she saw deceased relatives who aided her, and guided her in the realm of the dead – features typical of NDEs undergone by people who expect to undergo a potentially lethal experience (Greyson, 1985).

Restoration and normalisation of normal brain function restored normal perceptions, and she awoke to the accompaniment of ironically appropriate music:

“When I came back, they were playing *Hotel California* and the line was “You can check out anytime you like, but you can never leave.” I mentioned [later] to Dr. Brown that that was incredibly insensitive and he told me that I needed to sleep more. [laughter] When I regained consciousness, I was still on the respirator.” (Sabom, 1998)

She was awake, but paralysed by a muscle-paralysing drug – so she still could not move, breathe, or talk. She was indeed locked inside her body – she could not leave. Furthermore, she could not talk because of the muscle-paralysing drugs and the tube passed through her windpipe that was attached to the respirator.

She awoke later in the recovery room. Only then was the tube removed from her windpipe, and only then was she able to speak and tell all who would listen of her wondrous experience. And it was indeed a profound

personal experience, but it was an experience whose roots lay in the functioning of her body, complemented by imagery nestling in the deepest reaches of her psyche, as well as the fact that she was awake for several periods of time during her operation.

What is very evident throughout this whole story of Pam Reynolds is the fact that she was conscious at several periods during her operation. This is likely a reflection of an interaction of her undoubted anxiety about the operation with the anaesthetic technique used. Anxious people are more difficult to keep asleep than are calm and relaxed people (Woerlee, 1992). Her mental functioning during her periods of awakening was very evidently influenced by anaesthetic drugs, her anxieties, as well as by the residual effects of low body temperature. And lastly, her story is a remembered account of experiences undergone while under anaesthesia. This last point is the most important aspect of this story. It means that her story is a product of her socio-cultural upbringing, her prior conscious and unconscious knowledge of the operation she was to undergo, her prior knowledge of all things medical, that which she consciously and unconsciously observed during her periods of awareness, the effects of anaesthetic drugs, low body temperature, surgery, her anxieties, and finally, her personality. All these things were unconsciously combined and integrated into a coherent story of a wondrous experience.

Nonetheless, experiences such as that of Pam Reynolds are experiences teaching each of us how little we know of ourselves and the functioning of our bodies. Careful and critical study reveals their true nature, each experience revealing more and more about the true and complex nature of the human behind the mask of normal consciousness.

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**Gerald Woerlee** was born and raised in Western Australia, but has spent more than twenty years in the Netherlands where he works in medical practice as an anaesthesiologist. This article is a product of a year-long fascination in the ways natural laws and human body function can generate all manner of paranormal and spiritual beliefs. His contact email address is: [mortalminds@hotmail.com](mailto:mortalminds@hotmail.com), or via the website [www.mortalminds.org](http://www.mortalminds.org)



# Rhyme and Reason

Steve Donnelly



## Blowing hot and cold

IN THE LAST issue, I touched on the issue of subjective bias in the physical sciences. Well, no doubt synchronicity has been at play recently as, since writing the article, a couple of different topics that relate to this theme have come to my attention.

The first one was a paper which was read at the annual conference of the American Association of the Advancement of Science in Washington in February in which an art expert commented on the aesthetic decisions that go into the presentation of photographs from the Hubble space telescope. Elizabeth Kessler suggested that, rather than being the objective images that we might imagine them to be, the Hubble photographs that are published are modern equivalents of 19<sup>th</sup> century landscape paintings. The colour images are reconstructed from monochrome photographs taken through three separate filters and the scientists are balancing art with reality when they orientate and crop them, and adjust their contrast, brightness and depth of colour. Kessler proposes that the interpretations chosen for many of the images suggest features from landscapes and look strikingly like pictures from Yellowstone National Park or other places with similar craggy wild-west terrains. I have modified some of these pictures using Adobe Photoshop by rotating them through arbitrary angles, reducing their contrast and washing out the colours and, believe me, their impact is greatly reduced. An astronomical picture may be worth a thousand words but the words may be emotive poetry rather than dispassionate scientific text.

The second topic is one that many readers may assume had long since made the transition from real science to pseudoscience – cold fusion. *Hot* fusion is still posing significant technological challenges, essentially because scientists and engineers need to produce conditions of temperature and pressure similar to those in the sun so that isotopes of hydrogen can be ‘squeezed together’ sufficiently hard that their nuclei fuse together to form atoms of helium. They thereby lose a small amount of mass and generate (by Einstein’s  $E = mc^2$ ) lots of energy in the process. The cold fusion results of Fleischmann and Pons in 1989 purported to demonstrate that this reaction could take place in a benchtop electrolytic cell rather than in a building-sized, doughnut-shaped vacuum system costing hundreds of millions of dollars. Understandably, a flurry of research on this topic rapidly began in laboratories around the world but it failed to replicate Fleischmann and Pons’ findings and the cold fusion effect was written off as a combination of poorly controlled experiments, measurement errors and chemical (as opposed to nuclear) effects.

But cold fusion (a.k.a. low energy nuclear reactions) has not gone away. A community of scientists, including a number working in major laboratories, has continued to publish entirely respectable peer-reviewed papers in this area and I must confess to feeling slightly confused by the recent papers that I have read on this topic. I have always found it exceedingly difficult to believe that the conditions necessary for nuclear fusion could occur in palladium electrodes filled with heavy isotopes of hydrogen. On the other hand, recent papers by careful and capable experimenters continue to show generation of heat that appears to be inexplicable in terms of chemical processes. Researchers also report finding the common isotope of helium (helium-4) which is a possible fusion reaction product (but less probably than helium-3) in their electrolytic cells. This is perhaps less impressive, in that it is not clear that the possibility of contamination with helium-4 from air has been entirely eliminated – but the heat generated is difficult to write off as an error.

In July 2004, a group of prestigious scientists led by Professor Peter Hagelstein from MIT, submitted a 30-page report to the US Department of Energy (DOE) summarising recent work in this area and suggesting that the results were sufficiently impressive to justify a “dedicated programme of scientific research” [1]. The DOE then initiated an extensive review process involving 18 scientists with expertise in relevant fields and prepared a report on their conclusions regarding the Hagelstein paper. On the critical question of whether the experimental evidence pointed to the generation of excess power by nuclear reactions in cold fusion cells, the reviewers were approximately evenly split in their opinions. However, the DOE’s report concluded that “funding agencies should entertain individual well-designed proposals for experiments” aimed at testing whether low-energy nuclear reactions do actually occur. No reviewer recommended a focused, federally-funded major research programme in this area.

This is a long way from giving any kind of consensus scientific view regarding the reality of cold fusion (so much for clear objective conclusions in physical science!) But, on the other hand, it possibly keeps low energy nuclear reactions a little distance from potential bedfellows such as N-rays and polywater.

## Notes

[1] The paper *New physical effects in metal deuterides* by Peter L. Hagelstein, Michael C.H. McKubre, David J. Nagel, Talbot A. Chubb and Randall J. Hekman, as well as the DOW report, can be downloaded from: [http://www.foe.er.doe.gov/sub/newsroom/news\\_release/s/DOESC/2004/low\\_energy/index.html](http://www.foe.er.doe.gov/sub/newsroom/news_release/s/DOESC/2004/low_energy/index.html)



Steve Donnelly is a physics professor at the University of Salford.



## Philosopher's Corner

Julian Baggini

I HAVE ALWAYS been a supporter of the maxim “when in Rome, do as the Romans”, but I have only just discovered what it really means. It came to me in Athens, over and because of a cup of coffee.

Before I left England for my trip, I learned a few vital words and phrases. Most importantly, I had to know how to ask for a cup of coffee. My book gave me two options. I could ask for *ena Hellenico kaffe* or *ena Nescafé*. The second option I presumed was for the kind of tourist who finds going without a “good cup of tea” for two weeks a serious drawback to foreign holidays. For me, open-minded, intrepid traveller that I am, when in Greece, I would drink Greek coffee.

Once I arrived, however, it didn't take long for me to completely change my caffeination strategy. I found myself forced to conclude that the Greeks just hadn't achieved the same level of mastery over the sacred bean as the Italians, French or Spanish. Whereas these other great coffee drinking nations had all devised ways of separating the grounds from the drink, the Greeks were stuck with the frankly useless and crude method of simply using a fine grind and relying on gravity to prevent too much of it finding its way into your mouth.

Now I am sure there are those who prefer this style of coffee to all others, but I am equally sure that they were almost all raised on it and that custom and habit drive their preference, not taste. Take a panel of what John Stuart Mill called competent judges - those who have tried the full range of coffee derived pleasures - and I'll bet you the Greek variety walks away with the wooden spoon.

Another more shocking discovery supported my thesis that Greek coffee sucks. It transpired that the inclusion of Nescafé in the essential traveller's lexicon was not a sop to unadventurous tourists but a simple reflection of Greece today. For more popular than the indigenous brew is a whole range of beverages based on the globally ubiquitous instant coffee brand. The drink you are most likely to find decorating the street side café table of the fashionable Athenian is a frappé: instant frothy coffee to you and me. Such passion for freeze-dried granules would be unthinkable in Paris or Rome. The only explanation for the abomination occurring in Athens is that even this is better than the traditional Greek coffee.

And then I realised that I did not want to live like common Greek people, because they chose to drink rubbish and I knew there was a better way. From then on, it was cafetières or cappuccinos for me.

Was this cultural snobbery? I don't think so. Consider the Athenian in London. Would we advise that she eat and drink like the typical local? For lunch, should she grab a prawn sandwich, a packet of crisps and a Diet Coke? For dinner, would we urge her to go to the most popular local restaurants, such as Pizza Hut or McDonalds? I'd hope not.

I'm all in favour of travelling with an open mind and being willing to experiment. And, of course, though I maintain the Greeks fall down on their coffee, the quality of their day to day food is far superior to the British. It's not that I think Brits always know best (not least because I'm not all Brit). It's just that sometimes we do.

The question is, of course, does this line of thinking translate to cultural and moral practices too? Let's put it this way. If I got ill in the middle of a tropical rain forest, I'd rather be helicoptered to a western-standard hospital than put myself in the hands of an indigenous healer, even if some of their remedies really do work. And if I found myself among a people who thought it a good thing to kill strangers who looked at them a bit funny, I hope I wouldn't join in the slaughter on the grounds that I really ought to follow the local customs.

Such attitudes are neither arrogant nor disrespectful. You don't respect a culture by romanticising it and placing it above criticism. Rather, you insult it, transforming it from something real, human and fallible to some kind of exotic, other-worldly ideal. People make the mistake of thinking that any learning to be done from other cultures is purely one way. But if you go abroad willing to have your own beliefs challenged, you should also be prepared to challenge the beliefs of those you meet too. To show your own culture less respect than the culture of others is a strange way of expressing respect for difference. As for the idea that nothing is better than anything else and “what's true for you may not be true for me”, I hope readers of *The Skeptic* don't need the flaws in that position to be spelled out.

So now I understand what “when in Rome...” really means, if it is to be true. We should do as the Romans did: take what is good in what is local and add it to what is superior from our culture and what we have already appropriated from others.

Julian Baggini's next book, *The Pig that wants to be Eaten and 99 Other Thought Experiments*, will be published by Granta in July 2005.

Comments welcome to [julian@julianbaggini.com](mailto:julian@julianbaggini.com)

Julian Baggini is editor of *The Philosophers' Magazine* ([www.philosophers.co.uk](http://www.philosophers.co.uk)) and author of *Making Sense: Philosophy Behind the Headlines* (Oxford University Press) and *What's It All About? Philosophy and The Meaning of Life* (Granta). See [www.julianbaggini.com](http://www.julianbaggini.com)

## ASKE News

From the chairman of the Association for Skeptical Enquiry, Michael Heap



AT THE TIME of writing, ASKE is collecting membership subscriptions for 2005, so if you haven't joined before or have let your membership lapse, now's the time to subscribe. The annual subscription still stands at only £10 and you can now subscribe for 3 years (£30). As well as the *Newsletters*, the annual *Skeptical Intelligencer*, and the email network, we now have a media library whereby members may borrow (for a small fee to cover costs) materials mainly consisting of DVDs and videos. Our librarian is Jim Spencer, who has very kindly made available his extensive collection of materials for this facility.

Tony Youens has been revamping the ASKE website. The website can be reached through the standard url which is [www.aske.org.uk](http://www.aske.org.uk). However this isn't the only route. You can use <http://www.aske.clara.co.uk/> as well. If you want to contact ASKE by email, or pass on an email address to anyone, please use [aske@talktalk.net](mailto:aske@talktalk.net) which will come straight to Tony's Inbox. Incidentally, we are hoping to include on the website something akin to position papers on topics of relevance to scepticism. These topics could be telepathy, mediums, astrology, different forms of alternative medicine, UFOs and so on. If anyone would like to contribute such a paper (or may even have a suitable one already prepared) please let us know.

### The ASKE Challenge

Since the last issue of *The Skeptic*, the organisers of ASKE have decided to close the ASKE Challenge. This was an open challenge to anyone who professes to have psychic ability (which in this case could be the ability to contact the dead or to read people's minds using telepathic powers). This had been on the ASKE Website for three years and attracted little interest except, curiously enough, once the decision was taken to bring it to an end. Immediately two people (who may have psychically sensed its impending demise) sent in their answers to the set of questions that were posed by ASKE members. Each question asked for an item of personal information about a deceased individual known to the person who set the question (e.g. 'What was my grandmother's nickname?') Anyone who passed the challenge would receive £12,000. This money consisted of pledges by the members who set the questions, confident that they were in no danger of having to explain to their bank managers why they suddenly wanted to take out a loan. (Hence there was no need for one individual who emailed ASKE to work

himself or herself into a great lather over how much interest this money was accruing in the bank and how it could be put to better use helping unfortunate people.) Well, neither of the two individuals who entered the Challenge at the last minute were successful. It may be that at some future date ASKE will resurrect the Challenge or something along similar lines.

Incidentally, I was one of the question-setters. My question was 'What act was my father engaged in when Neville Chamberlain broadcast the declaration of war on Germany?' I am now issuing my own individual challenge and anyone who sends me the correct answer will receive a signed photograph of me.

### The Skeptical Intelligencer

There are a few spare copies of the *Skeptical Intelligencer* for 2004 available to non-members. This issue concerns pseudo-history, pseudo-archaeology and pseudo-palaeontology. There are papers by Mark Newbrook, John Wall, Mike Brass, Doug Weller and Lee Keener, and a review by Mark Newbrook and Sarah Thomason of *The History of England Revealed* by M. J. Harper. For a copy of this issue of the *Intelligencer* write to me, enclosing a cheque for £3.50. The topic for the 2005 issue has yet to be decided. Any suggestions or offers?

### The 12<sup>th</sup> European Skeptics Congress

Many of you will recall the 11<sup>th</sup> European Skeptics Congress organised by ASKE in 2003 in London. ASKE has now received the following announcement:

The next European Skeptics Congress will be held in Brussels from October 13<sup>th</sup> - 16<sup>th</sup> 2005. The venue of the congress is in the centre of Brussels and the opening session will begin with a reception in the evening of Thursday 13<sup>th</sup>, probably in the historic Gothic City Hall. The closing session will be Sunday 16<sup>th</sup> around noon. The two main topics will be alternative medicine and 'pseudo-science and the media'. The session on alternative medicine will include scientific tests, the political and legal aspects, and reports on any kind of quackery or health scam. The session on the media will include the views of scientists and journalists on how information on extraordinary claims is processed, lobbied, and fairly represented or manipulated and biased. The conference language will be English.

At the time of writing, the contact person is Prof. Dr. Willem Betz, Dept. of Family Medicine, University of Brussels VUB, Laarbeeklaan 103, B-1090 Brussels ([wbetz@huis.vub.ac.be](mailto:wbetz@huis.vub.ac.be)).

**Michael Heap** is the Chairman of ASKE and a clinical and forensic psychologist in Sheffield. ASKE email address = [general@aske.org.uk](mailto:general@aske.org.uk)  
ASKE website = <http://www.aske.org>

# Reviews



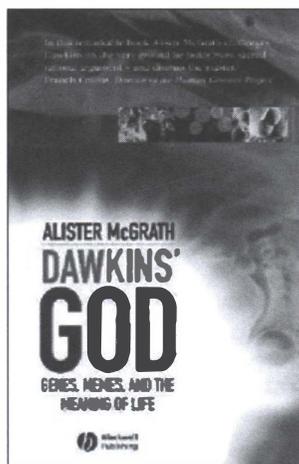
## DOWN WITH DAWKINS!

### Dawkins' God: Genes, Memes and the Meaning of Life

by Alister McGrath

Blackwell, £45.00 (hb), £9.99 (pb), ISBN 1-4051-2539-X (hb), 1-4051-2538-1 (pb)

McGrath, a theologian and former atheist and researcher in molecular biophysics, argues that some of Dawkins' attacks on religion are directed against views that do not represent mainstream Christian thought, e.g. the argument from design as expressed by William Paley. However, very similar ideas are alive and well in the form of 'intelligent design', and Dawkins could well claim to be attacking this. Similarly, McGrath criticizes Dawkins' sharp dichotomy between science, as relying on reason and evidence, and religion, as relying on faith. Dawkins regards faith as 'belief in spite of, even perhaps because of, the lack of evidence'.



McGrath considers this an absurd caricature, and quotes instead a Christian definition in which faith 'commences with the conviction of the mind based on adequate evidence'. But the *Catholic Encyclopaedia*, surely authoritative, states 'there is a twofold order of knowledge...in one we know by natural reason, the object of the other is mysteries hidden in God, but which we have to believe and which can only be known to us by Divine revelation'.

One might add that McGrath, an ordained Anglican priest, must believe that 2000 years ago God impregnated a virgin in an obscure Middle Eastern village, whose offspring died, was buried, came back to life, and ascended into Heaven. The only evidence for this is a story written down, in different versions, many years later, for which there is absolutely no corroboration. All this looks to me much more like Dawkins' version of faith than McGrath's.

The strongest part is an attack on Dawkins' concept of 'memes'. I think McGrath is right in saying that these are really no more than an analogy. I also think McGrath has shown that Dawkins too often over-eggs

his pudding, and sometimes offers polemic rather than informed argument. Religion, and even Christianity, are such complex phenomena that they cannot be dismissed in the way Dawkins sometimes seems to do.

John Radford

## SINS OF THE TIMES

### The Whole Story: How Science Could Bring Together Conventional and Alternative Medicine

by Toby Murcott

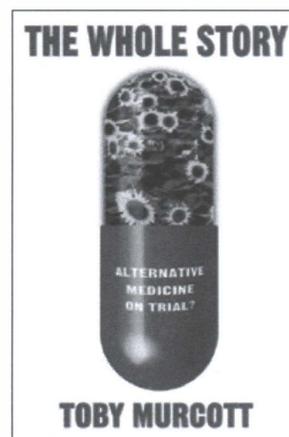
Macmillan, £16.99 (hb), ISBN 1403945004

Murcott, who trained as a biochemist, writes on complementary and alternative medicine (CAM) for *The Times*. He also (according to this book's introduction) took his sick cat to a homeopath.

*The Whole Story* deals with the methods and difficulties of testing CAM treatments. The subject would make a good book, but this isn't it. It's waffley and over-simplified. Essential points, like an explanation of clinical trials, and interesting insights – for example, that the middle classes go private or to CAM practitioners to buy time – are hidden in featureless blocks of text. Murcott fails to define words like *placebo* and *dualism* on first mention, takes too long to get to the point and doesn't give enough illustrative material.

I'd love to read a genuinely holistic approach to the subject: one that turned a critical gaze on practitioner, client, experimenter and writer. It would include a history of the rhetoric ("the how is not important") and an account of the psychology involved: e.g. avoidance of cognitive dissonance ("I've given hundreds of pounds to this nice friendly person, their treatment must be working"); why people don't take prescribed drugs; how expectations affect outcomes. Can questionnaire results be trusted? Doesn't everybody tell market researchers they go to the theatre three times a week? Do people want to be cured or happy? Would doctors see a higher success rate if they handed out dollops of flattery and sycophancy with the prescription?

This book might be useful to someone interested in CAM but with little knowledge of treatment testing,



who wouldn't read anything with a "hostile" approach. Though Murcott is indulgent to CAM, he covers the methods and difficulties of testing, and he doesn't hector or preach. But I'd much rather read a collection of his *Times* columns, which give the (orthodox) research results so far for the CAM treatment of the week.

Lucy Fisher

## SCIENCE FRICTION

### Fabulous Science: Fact and Fiction in the History of Scientific Discovery

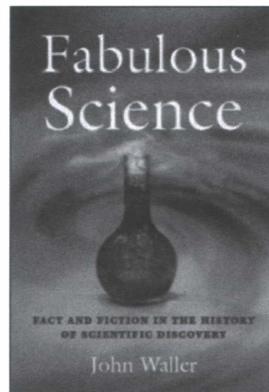
by John Waller

Oxford University Press, £8.99 (pb), ISBN 0198609396

Waller's main theme is our predilection to glamourise, embellish and invent, giving case studies showing that even in science there can be a gap between myth and reality and nothing should be taken at face value. He sets about the great names with vigour, and suggests the useful term "presentism" for our inability to separate our view of the past from our present knowledge, so that in retrospect what happened seems obvious and inevitable and its proponents always brave battlers against ignorant opposition.

Waller spends time telling us things most people interested in the history of science will already know, such as that to say Darwin originated the idea of evolution is grossly oversimplified, and Huxley's account of defending him against Bishop Wilberforce exaggerated, but his revelations about Pasteur, Eddington, John Snow (he didn't remove that famous pump handle), Mendel, Lister, Banting and Best, and Fleming (perhaps the classic example of how one name predominates) are interesting. However, I was saddened by Waller's statement that Sir Cyril Burt was "exposed as an academic fraud." He adds that the case is unproven but makes no mention of the evidence that he was largely innocent. It's a passing remark, but casts doubt on Waller's thoroughness. And for someone concerned to demolish myths it's odd that he should apparently give credence to the story of Galileo and the Leaning Tower of Pisa.

For a book from probably the most reputable publisher in the world this one has a remarkable number of blunders: the "Queensbury rules" (Queensberry), "loathe" (loath), "effect" (affect), "over-weaning" (overweaning), and in the index "Tennyson, Lord Alfred" (Tennyson, Alfred, Lord). Gwyn Macfarlane and Leslie Macfarlane are in the index as being on the same page (Leslie is in fact elsewhere), and several important names (Macleod, Collip, and Banting) are missing completely.



This is an interesting book and a salutary lesson in not taking even seemingly authoritative works at face value if the authors haven't gone to the original sources.

Ray Ward

## LONG LIVE DAWKINS!

### The Ancestor's Tale: A Pilgrimage to the Dawn of Life

by Richard Dawkins

Orion Books, £25.00 (hb), ISBN 0-297-82503-8

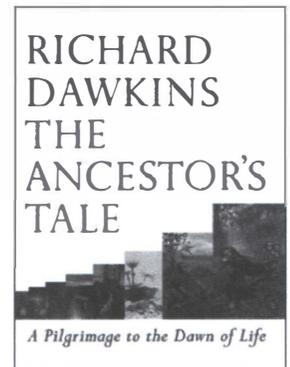
There being, by now, not much room left to drive further nails into the coffin of creationism, Dawkins seems to have decided instead to drop a full-colour coffee-table book onto it from a great height. This book is of course yet more dreadful news for disdainers of Darwin: not just crammed with powerful arguments and amazing discoveries about the varieties of life, but presented in an imaginative and just plain beautiful way.

Dawkins has hit upon a novel scheme for conveying the stories of evolution: a backwards pilgrimage whereby we retrace our lineages and are joined *en route* by other species. One of the many virtues of this approach is that, whereas the evolution of species is essentially unpredictable – though a case is made for the predictability of certain types of convergence – the tracing of ancestries inevitably leads us to common ancestors, and highlights our own profound relatedness to other living creatures. This kind of reverse contextualizing is done in the engaging style we have come to expect from Dawkins, and, unusually, is boosted by marvellous illustrations throughout the text.

The book is organized as a series of 39 rendezvous, each providing one or more exemplary tales, so that, as the Amphibians join us in the pilgrimage, we have the Axolotl's Tale, and the Protostomes bring the Ragworm's Tale. Each tale brings detailed discussions of fascinating and counter-intuitive evolutionary phenomena, such as the fact that "for particular genes, you are more closely related to some chimpanzees than to some humans", or that "although few, if any, of our genes come from Neanderthals, it is possible that some people have many Neanderthal ancestors." Along the way we encounter the bdelloid rotifers, who manage to cause a scandal by not having sex, and a protozoan that turns out to be a town.

This rich and stimulating book is a joy to read and re-read and is almost enough to make one feel sorry for creationists. Almost.

Paul Taylor





# LETTERS

## An Inside Job

Jeremy Bojczuk is right to retain some scepticism regarding who killed JFK (*Skeptic*, 17.4, Winter 2004); almost all the popular explanations have holes. However, he does not mention ballistic expert Howard Donahue's hypothesis (it is the subject of Bonar Meninger's book *Mortal Error*, 1992). According to Donahue, Oswald fired only two shots, the first of which missed, although a fragment hit Kennedy. The second shot hit Kennedy high in the back, exited via his throat and then hit Governor Connally. Almost immediately afterwards, bodyguard George Hickey, in the following car, reacted to Oswald's shots by grabbing an AR-15 machine gun and standing up on the back seat. Unfortunately, at this point the cavalcade accelerated and Hickey was unbalanced. In falling, he accidentally pulled the trigger and fired his weapon, hitting Kennedy in the head. Donahue's explanation is based on ballistic evidence: the damage to Kennedy's head could not have been caused by any of the bullets used by Oswald – that bullet could only have come from an AR-15 rifle.

This hypothesis explains where the third shot came from. Donahue addresses the problem of the shot appearing to come from the front – he shows how a head can jerk backwards even though hit from behind. He also explains how the ammunition used by Hickey exploded in Kennedy's head.

Insofar as it makes many other conspiracy hypotheses redundant, this 'cock-up' hypothesis is attractive. I do not understand why it has not attracted more attention. Of course, the idea that a Secret Service agent was accidentally responsible for killing the President is embarrassing for the US Government and has probably been suppressed for that reason.

**Steuart Campbell, Edinburgh**

## Pressing the right buttons

I suggest Jeremy Bojczuk (*Skeptic*, 17.4, Winter 2004) stops watching Oliver Stone movies and reads Gerald Posner's *Case Closed*.

I'm surprised you printed the article but you know which buttons to press.

**Eamonn McNulty,  
Surrey**

## In Search of the Light

It comes as no surprise that Dene Bebbington should harbour the sceptic's immutable hostility to anything even faintly resembling Creation Science or Intelligent Design. But even for a book review directed at a sceptic readership, this was particularly skewed.

His opening admission that the mere mention of a "life force" on the back cover activated "warning bells" is consistent with the old, dogmatic approach to these matters – there is expanding interest within the scientific community in consciousness studies that border on vitalism. Unfortunately that initial impression appears to have buried any attempt at objectivity; evident in the use of phrases like "spurious analogies", "pseudoscience" (the sceptic's standard put down) and "muddled thinking" with no supporting illustrations whatsoever from the book.

Bebbington completely misses the point made abundantly clear in the preface, that the book is purely a "what if" proposition aimed at a public lay readership with little or no prior scientific literacy. Hence, the presentation reflects a "modest knowledge of science". The book is neither a statement of belief (as he assumes) nor a claim to scientific discovery. It is merely an invitation to speculate on what certain scientific facts might mean when analysed alongside areas of our existence that are still a mystery. Indeed, the stated aim is to encourage the reader to "step back from your inherited and acquired beliefs and pause for thought".

His claim that the book is "sympathetic to young earth creationism" smacks of the increasing intolerance highlighted therein: theists and atheists demanding that we must support one camp or the other without rational examination of their arguments. Having cautioned in the preface that, "The material included here on origin and other scientific investi-

gations are no more than a very brief summary of findings and theories to date" and directed readers to references of all shades for detailed expositions, I further point out in chapter 2 that, "Young earth advocates face a massive uphill task as they attempt to overturn established scientific principles in astrophysics, geophysics and particle physics [and that] Critics (including some theologians) accuse creationists of 'abusing science'". Whence, then, derives Bebbington's perceived bias? A quick browse of the 'blog' and articles at my Web site ([www.why-we-exist.org](http://www.why-we-exist.org)) should dispel any notion of sympathy for theistic creationism, etc.

The description of my Solar Laboratory Theory as "bizarre", and "far worse" than a religious viewpoint, is either disingenuous or plain absurd. How does the suggestion that we may be "cosmic guinea pigs" in a practical experiment even equate to (much more exceed in bizarreness) religious beliefs of revelation, incarnation, atonement, rapture, martyrdom and life after death, among others? Had Bebbington not "lost interest" halfway through, he would surely have noticed that the book explicitly rejects all such ideas. And why is my idea any more bizarre than, say, Prof. David Deutsch's theory of "many universes" in which several versions of our person supposedly co-exist?

I wonder if he is still as dismissive of my theory after Prof. Anthony Flew's dramatic admission in December 2004 (fifteen months after *Why We Exist* was published) that there are credible scientific arguments for intelligent design of our universe and life. And this after over 50 years of vehement opposition to the idea. Flew's conceptual 'God of Aristotle' with no belief in an afterlife, etc., mirrors the designing entity described in my book. Of course where there is intelligent design, there is a very high probability of purpose. Bebbington may not have found anything "especially insightful" in my cosmic guinea pigs thesis on this difficult subject (understandable if one approaches the matter with a closed mind). But I take issue with the claim that it is not

“original”. As far as I know, no one has previously connected all the dots in disparate fields and published an identical theory.

The penultimate snide remark about Pen Press being a self-publishing outfit is hardly worthy of comment, except that it betrays unfamiliarity with the realities of digital age publishing. Self-publishing is a fast-growing segment of the market that is endorsed by traditional publishing houses. Going down this route is no indication of a book's merit.

Manuscripts are subjected to rigorous scrutiny and criticism. Authors are publishing direct for all sorts of reasons. I chose Pen Press because my book contains material that may well be outdated in the two years or more it would take to go through a literary agent and a large publisher.

In a final twist of irony Bebbington grudgingly acknowledges

that “the writing is quite good and there are references at the end of each chapter”. Not bad for a piece of “over-priced nonsense”.

Now that scientists from different disciplines are joining with philosophers, theologians and ethicists to investigate, *inter alia*, the nature of human consciousness at a new Centre for the Science of the Mind at Oxford University, one can only hope that sceptics will abandon their dogmatic rejection of new frontiers of thought and join in the search for ultimate truth.

Eugene Bell-Gam, Sudbury,  
Middlesex

### Baby who learned to read before he could speak

Mark Newbrook, “How (not) to talk to aliens” (*The Skeptic*, Winter 2004) writes that he knows of “no properly

conducted experiments which would demonstrate or even suggest that such things occur”, such things including babies who are able to read.

One such experiment was conducted by two academic psychologists, in Hawaii in about 1970. They exposed their son, Kyoto Steinberg, to written forms of the words he knew but could not yet say, in the pre-speech period from the age of six months onward. He learned to recognise all the written words, and the experimenters suggest that it would be valuable for all children to learn to read so early.

### Reference

Steinberg, D. D., & Steinberg, M. T. (1975). Reading before speaking. *Visible Language*, 9(3).

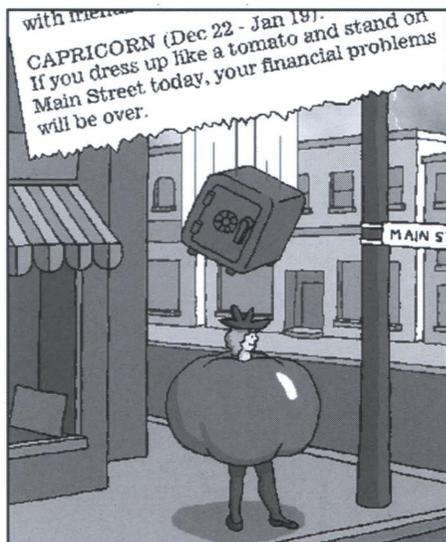
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