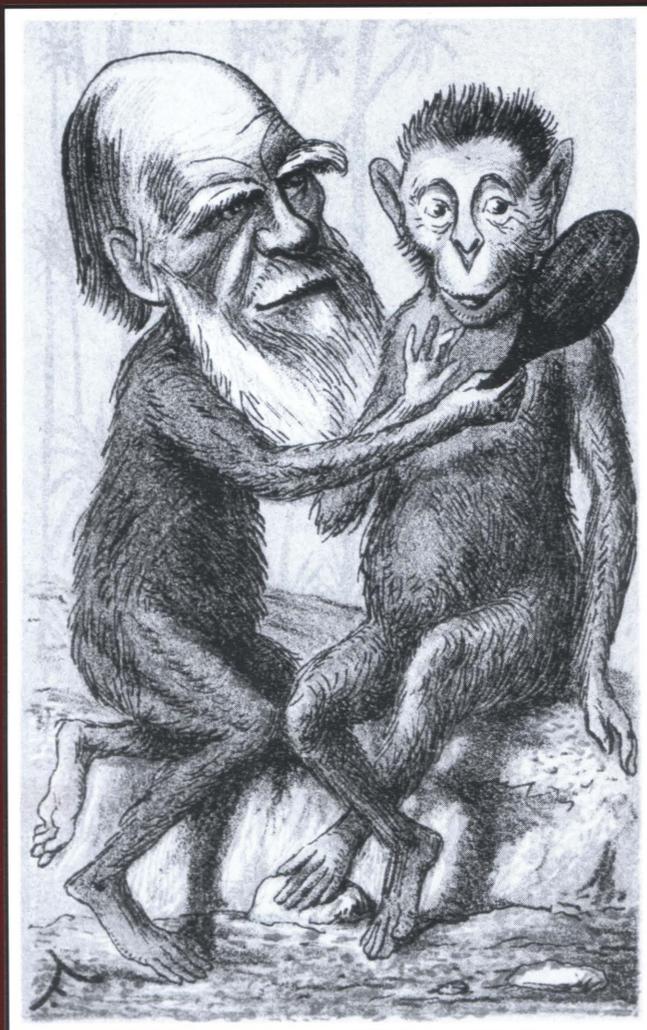


Volume 14 Number 3

The **Skeptic**



Why are people still threatened by Darwinism?

Also in this issue:

Women are NOT from Gullibull
Reinventing the Past
The Skeptic Library Scheme

Plus: News • Book Reviews • Comment • Humour

Hilary Evans' Paranormal Picture Gallery



NOTHING IS WASTED IN NATURE.

The Commune, which for a few weeks in 1871, after the disastrous war with Prussia and occupation by the Germans, subjected Paris to communist rule and ended with savage reprisals. The bodies of executed Communards were thrown into mass graves at Issy, in the outskirts of Paris. The hydrogen from the decaying corpses, self-igniting, created eerie "feux follets", which the popular mind could easily suppose to be the dead souls of the victims. "Nothing is wasted in Nature," was the sardonic comment of the eminent scientist Camille Flammarion.

Hilary Evans is co-proprietor of the Mary Evans Picture Library, 59 Tranquil Vale, London SE3 0BS.



The SKEPTIC: Volume 14 Number 3

ISSN 0959-5228

Published quarterly from
10 Crescent View
Loughton, Essex IG10 4PZ
United Kingdom

Email: edit@skeptic.org.uk
 Web: www.skeptic.org.uk
 AOL Keyword: **skeptic**

Tel.: 07020 935 370
 Fax: 0845 334 7793

Editor
Wendy M. Grossman

Associate Editors
Steve Donnelly
Toby Howard

Administration
Rachel Carthy
Richard Hall

Webmaster
Phil McKerracher

AOL Area
Liam Proven

Finance Manager
Dave Martin

Skeptics in the Pub
Scott Campbell

Cartoons
Donald Rooum
Tim Pearce
Nick Kim
The Parking Lot is Full

Special Consultant
Cyril Howard

Special thanks for Internet services to
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Graphic Design by
Committee for the Scientific
Investigation of Claims of the
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Published by
CSICOP and **Skeptical Inquirer**
 International Headquarters
 PO Box 703, Amherst, NY 14226 US (716) 636-1425

FOR DETAILS OF EDITORIAL MEETINGS CALL
 (07020) 935370 10AM TO 9PM OR EMAIL
 EDIT@SKEPTIC.ORG.UK



Skeptic in Chains

Wendy M. Grossman

Ephemera

THE INVALUABLE Simon Hoggart wrote recently in his weekly *Guardian* diary about a new phenomenon in the US, which he discovered via an ad in the *National Enquirer*: celestial posters to bless your home. Something like \$35 will buy you one of these precious gems featuring...featuring...aw, gee, now Princess Diana is an angel? Or, excuse me, Diana, Princess of Wales. I'm sure she'd come down and swat me if I got her title wrong.

You could ask what a reputable journalist like Hoggart was doing reading the *Enquirer*, but of course we know the answer to that. Like they said in the 1997 movie *Men in Black*, that's what you have to read if you want to find out what's really going on.

There is nothing new about selling tacky artefacts to capitalise on people's beliefs. The poster, a portion of which was reproduced in the *Guardian*, had Diana nicely decorated with British flag and halo, and, as Hoggart pointed out, descending with her skirt belled out so that "devotees can see up her dress." There is also nothing new about a particular person's seeming so much larger than life that people simply can't bear to believe he (or she) is dead. We've had this problem most famously with Elvis for years (by the way, the *Skeptic's* printer would like to apologise for the poor quality of the front cover photograph in 14.1; that shadow behind Chris French and his team was clearly Elvis in the original). A trawl around the Net reveals that Diana, too, has been sighted (see http://www.deadelvis.com/sighting/see_di.html) everywhere from an Australian Volvo dealership to a DSS office signing on for the dole.

So, you could say, the cast changes but the stories are the same: from Marilyn to Elvis to Diana. (Is Jesus' resurrection in the Bible a similar psychological phenomenon?) For skeptics, this is a long-running problem: how do you keep writing debunking stories about the same topics year after year without getting bored? There are periodic excitements in, say, the field of parapsychology or even in astrology if someone comes up with a clever, new way of showing that people believe what they want to believe and that the perceived accuracy of horoscopes is strongly influenced by how personal the subject believes them to be. But over time, in general, what skeptics are left with is saying repetitively and drearily, "But it doesn't work, you see. It goes against everything we know about science."

This is a major reason why in recent issues of *The Skeptic* we have tried to branch out a bit and look at currently controversial topics where the science is conflicting.

These are potentially the myths of tomorrow, and they are taking shape in front of our eyes. Subjects like global warming, the safety of mobile phones, and genetically engineered food are fascinating examples of how science, politics, and the popular vote interact. Other issues, like Holocaust denial and the rewriting of history to suit contemporary desires (see Rachel Carthy's article in this issue), also seem like legitimate subjects for a skeptical magazine.

But sometimes I wish we could be a little more...pre-cognitive. Think how much more brightly our credibility would shine if we had predicted that Diana would become an angel (no points, unfortunately, for predicting that Mother Teresa will eventually be canonised), or that Jeffrey Archer was going to be jailed for perjury (where were the psychics on that one, hey?).

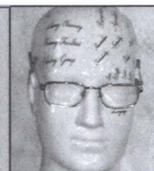
The problem is that there are fashions in beliefs as there are in everything else. Every time a movie studio drops millions of dollars into producing a new film, it's gambling on its ability to predict public tastes and interests some two years in the future. Product designers, musicians, authors, and playwrights share the same problem; it is notoriously hard, even for experienced people with a long track record of success, to tell in advance which products (or productions) will be hits and which won't. I figure there isn't much difference between, say, the craze for the hula hoop and the craze for spiritualism, except that spiritualism has arguably lasted longer. Beliefs, like scooters or platform shoes, get revived, too, whenever the right combination of factors (timing, personalities, story) comes along.

It's been my observation that if you wait long enough, everything comes into fashion. So logically, at some point, we skeptics, the height of unfashion, the bane of all our friends with our sour-faced, party-poopers, "You don't really believe that, do you? Because..." – we, too smart for our own good, WE will be fashionable. Could someone please make sure we have a poster ready when it happens?

* * *

This is my last issue as overall editor of *The Skeptic*. From here on in, Chris French and Kate Holden will be taking over. I'll still be around, of course, doing Hits and Misses, suggesting article topics, editing the electronic digest (to sign up for it, drop an email message to digest@skeptic.org.uk), and writing my column. Expect to see it retitled back to "Skeptic at large..." starting next issue. Thanks for the ride, folks.

Hits and Misses



Mind over smell

IT'S FASCINATING to note that the placebo effect is still going strong despite recent research casting doubt. *New Scientist* reported in April on a test of aromatherapy conducted by a team of German and Austrian scientists led by Dr. Josef Ilmberger of the Ludwig-Maximilians University in Munich. In this test, 50 volunteers donned surgical masks, onto which the scientists sprinkled water before clocking the volunteers' reaction times while performing a series of mental tasks. Some of the volunteers then had oils such as peppermint, jasmine, and ylang-ylang sprinkled on the masks (while others had water), and their reactions were tested again.

There was no noticeable difference in reaction times. But volunteers were asked to rate the oils' smell for strength, pleasantness, and stimulation. The test subjects who rated the oils highly did show a small improvement in reaction times. The researchers concluded that the effect was "mainly psychological". Next, the researchers intend to try rubbing oils into subjects' skin. Good to see this sort of research being done; makes us sound less like spoilsports.

Chinese tea, anyone?

PEOPLE ARE often confused about the skeptical view of so-called "alternative" medicine (as the late John Diamond said earlier this year, "There is no such thing as alternative medicine, just medicine that works and medicine that doesn't"). They think we think all alternative medicine is useless. Rather, what we think is that some brands of alternative medicine are useless but harmless while others can be valuable – but typically have some risks accompanying their use. Herbalism fits in the latter category. Drugs prescribed by medical doctors often are refined versions of the chemicals found in plants; herbalists prescribe the original plant version. Accordingly, just as medical drugs have side effects and risk factors, so do herbalists' wares.

The same is, of course, true of Chinese herbalism, which is rapidly becoming big business in the UK, as other parts of Europe. One problem, according to the *Observer* last year, was that herbalists sometimes prescribe the wrong drugs. To prevent this – since the consequence of such an error was kidney failure in 70 people in Belgium – Oriental doctors and Western scientists set up an authentication centre at Kew Gardens to help ensure correct labelling and prevent fraud. We think this makes a lot of sense. Apart from anything else, it will

help bring about the research that should unquestionably take place into whether these treatments are effective and if so, why.

Spontaneous Pop-Tart combustion

OVER IN the US, the country the UK likes to characterise as the home of silly lawsuits, a New Jersey couple is suing Kellogg's and Black & Decker for \$100,000 in damages to their home after sticking a Pop-Tart in a toaster while they drove their kids to school. When they came back, about ten to twenty minutes later, smoke was pouring out of the house, and firefighters were already in action. They eventually listed the cause of the fire as "unattended food."



And there are precedents. Back in 1995, according to Reuters, Kellogg paid \$2400 to a man in Springfield, Ohio, who said that a Pop-Tart fire damaged his home in 1993. That same year, humorist Dave Barry reported that he was able to cause a couple of strawberry Pop-Tarts to shoot flames 20 to 30 inches into the air by putting them in a toaster and holding the lever down for five minutes and 50 seconds. (Barry went on to suggest that this might provide a valuable substitute to the Strategic Defense Initiative.)

Forget the money, which is the focus of all the press reports. We want to know why no one is investigating. If Pop-Tarts are spontaneously combusting across America, there must be a reason. Aliens may be trying to get in touch with us. They may be trying to warn us we are about to explode. The people should be told.

Celebrity corner

WE ARE HAPPY to report that actress Kate Winslet has bought a ghost. Considering the idiocies that a lot of

actresses spend their money on – crystals for the four corners of their bathtubs, colonic irrigation, past-life regressions, and let's not forget those two rice cakes Calista Flockhart told *Guardian Weekend* she likes to binge on occasionally – a ghost seems almost respectable. Especially coming, as this one did, with a whole house attached to it, in Tintagel.

We tell you this because we sadly managed to miss March 2001, which the Web site Future365.com (“dedicated to the unexplained and paranormal”) organised. The idea was that haunted houses and hotels would get in touch and they would send out a Webcam which everyone on the Internet could watch for signs of ghostly activity. No ghosts were spotted, but Future365 has since died.

A fool and his stars...

THE CONTRACTION – we don't like to use the word “crash” – of the stock market in the last year is the kind of thing that sends people scurrying to find a better gambling system. Of course, as the legendary Wall Street dean Benjamin Graham observed long ago, bright young men have offered to do wonderful things with other people's money since time immemorial. So we don't know why anyone was surprised when today's generation of wizards made the same promises and failed equally dramatically.

In any event, *Lloyd's List* let us know in March about the exciting new field of astroeconomics, “the art of using astrological cycles to predict financial asset prices.” To be fair, astrology can't do much worse than many of the traditional brokerages have done recently in predicting share prices – in the US, a few of the more, er, optimistic analysts are getting sued. In any event, financial astrologer Henry Weingarten is now using astroeconomics to manage the New York-based Astrologers fund, which claims to manage between three and four million dollars in assets.

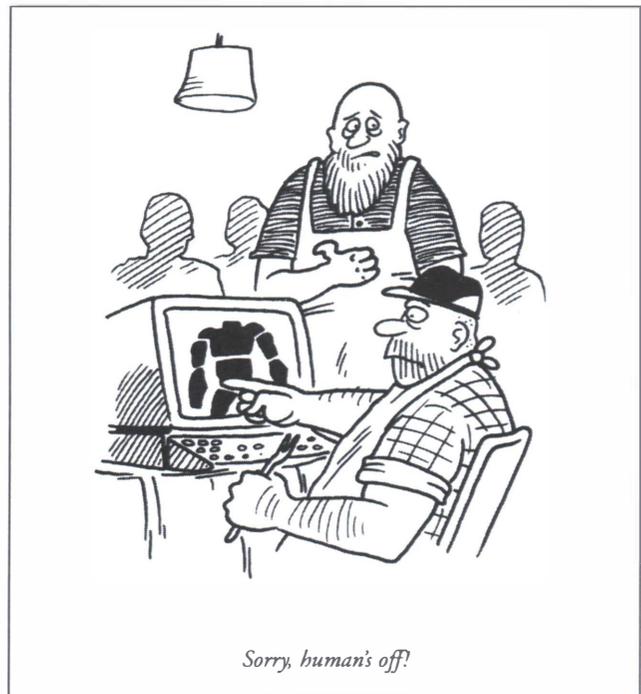
Weingarten claims to use both technical analysis and fundamental analysis as well as astrology in picking stocks. Fundamental analysis – the business of reading balance sheets, company reports, and regulatory filings – is real work. Technical analysis, though used by many brokerages, is the tea leaf-reading style of investment analysis: you look at charts of stock prices and try to extrapolate their future movements from existing patterns.

Weingarten's picks for this year are safely large-cap: IBM, General Motors, and AT&T for the first half, and Home Depot and Microsoft for the second. We will be interested to measure the success of these predictions.

Scandal on the Internet

NOW, WE know you're going to say, “What else is new?” but this was a story waiting to happen. About a

year ago, a concerned CIX person asked publicly whether something oughtn't to be done about the ManBeef people (<http://www.manbeef.com>). “For the last 19 years ManBeef has been the world's leading human meat distributor,” the Web site stated deadpan. “We have established a reputation for having only the highest quality human meat products and dedicated customer service representatives.” This lovingly produced Web site, with plenty of background information, recipes, and much other detail, including a price list, was immediately identifiable as a hoax. First, the site gave no actual information on how you could order any of its products. Even a criminal enterprise must get its customers' orders somehow. Second, the company's domain name registration was in...Binghamton, New York, with a phone number in North Carolina.



We sent the Web site's supposed home address to a local contact, who immediately confirmed it was fake. We therefore felt confident in announcing the site was a hoax, and more or less forgot about it.

More recently, that invaluable resource the Urban Legends Web site (<http://www.snopes2.com>) actually signed up for ManBeef membership. The company was supposed to send them a package of material including an instructional video once they had passed the background check, but several months after the estimated arrival date, they are still waiting.

In late June 2, the North Carolina 16-year-old whose phone number appears on the domain name registration, confessed it was a hoax, a story that got picked up unhappily by the local Binghamton paper. We are only sorry the British tabloids didn't discover the story before it had been debunked.

Women are NOT from Gullibull

Lucy Sherriff demands to know why women's magazines are so full of credulity about the paranormal

WOMEN'S MAGAZINES are increasingly a source of real information – decent articles that provide us with details about recent breakthroughs in medicine, safety, health and fitness and so on. For example, in one recently launched fashion magazine, there was a four-page article about the very real dangers of STIs (sexually transmitted infections). As the AIDS awareness campaigns fade into history, apparently people aren't using condoms anymore and cases of chlamydia and gonorrhoea are on the increase. Certainly a topic that should be covered.

And yet, at the same time, nearly all women's publications carry horoscopes. Most of us really do only read them for a laugh, and let's face it, the horoscope debunking has been so thorough that the people who actually take it seriously are few and far between. So, why are they still there?

But more worrying, for me at least, is the number of articles about utterly spurious psychics, auras and similar psychobabble, nestling in between real news and discussion about serious issues.

Take an article that appeared in a popular health and fitness magazine not too long ago. It was a profile of a prominent "psychic" who was telling the readers all about "How to see your Aura!" She was given several hundred words to do this. (This is in a magazine that also carries regular features about the importance of self-screening in the prevention of breast cancer.)

After explaining, at length, how important one's aura was, and how it could be a really useful barometer of our physical and spiritual well being, she explained how we too could learn to see auras. The trick – and you'll love this – is to look at your reflection in the shiny side of a CD. No, really. Apparently the colour you see dominating the area around your head is your aura.

In the interests of scientific experiment, and trying really hard to keep an open mind, I had a go. After a bit of twisting and spinning around, I concluded that I had many different auras. Which one seemed to depend on the angle between me and the light in the middle of the room. What could the explanation possibly be?

The same magazine that wrote about the importance of safe sex featured an article in which readers contributed spooky stories of strange happenings that had no rational explanation.

Among the tales were the usual suspects: predictive dreams, hauntings by dead friends, and bizarre coincidences that even the most harden-ed skeptic would still notice as odd. Explicable, but odd nonetheless.

Try this one for sheer brazenness though:

"We used to keep small change in a glass bowl in our flat," says Laura, 26. "One day I saw it was full and suggested to my boyfriend that we take it to the bank. The next day, when no one but us had been in the flat, we found the bowl was completely empty."

The "paranormal psychologist" who was analysing the readers' experiences had this explanation: "This is most unusual, and only a paranormal explanation, transference – objects moving by themselves – can explain it."

The only possible explanation was transference? Perhaps sock gremlins had branched out into small change. Maybe it was *The Borrowers*, and she'll have her cash back sometime next year.

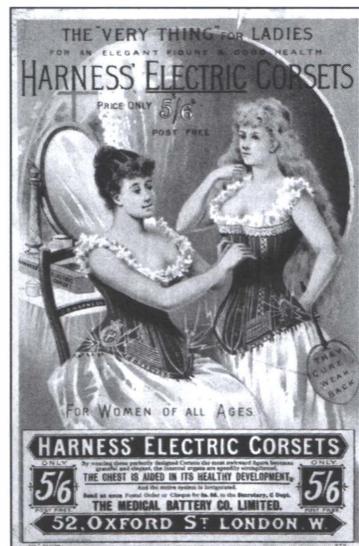
Back in the real world, maybe her boyfriend had taken it to the bank. Or, what about theft? I mean, let's be sensible about this. If no one but Laura and her boyfriend were in the flat and she knew she hadn't taken it, he is the prime suspect for having nicked it. More worryingly, the flat could have been broken into.

At least with spontaneously shattering candlesticks it is sufficiently out of the ordinary that you can (with a little grimace) understand why people resort to paranormal explanations.

My real gripe though is not that this was a particularly lame attempt at invoking the paranormal, but that the paranormal is still considered a proper topic for discussion in women's press. It doesn't get coverage in the comparable men's magazines unless it is being mocked.

I find it insulting to have equal coverage given to breast cancer and aura tutorials. And if the people who put together these publications keep filling them with this kind of junk, how am I to take them seriously when I read articles about Rohypnol or slave labour on the cocoa farms of the Ivory Coast?

It isn't harmless fun any more. It is trivial rubbish and women everywhere should be as irate as I am that it is considered worthy of our attention.



Lucy Sherriff still has to read these magazines as part of her work in PR. She used to be a journalist, but sold her soul for a pay raise.

Trying to Detect God

Why are people still threatened by Darwinism? **Dene Bebbington** examines the creationist Intelligent Design movement

NEARLY A CENTURY and a half after the publication of Darwin's *The Origin of Species*, Darwinian evolution is still being challenged by people with seemingly politico-religious motivations. A recent example of this is the Intelligent Design movement, which seems to be rehashing the theologian William Paley's views in a scientific garb.

Paley made perhaps the most well known exposition of the argument from design (an argument for the existence of God) in his work *Natural Theology*, published in 1802. He made the point that if one were to come across a watch on a heath one would explain its presence as something designed, because it is complex and has a purpose. He argued that since living things exhibit the same pointers to design, albeit to a greater degree, they, too, must have been designed rather than have arisen through natural processes. The problem with this argument and subsequent versions of it is that it boils down to analogy. Direct evidence for a designer is not provided.

With more than a hint of anachronism, the intelligent design movement puts forward the notion that there is a way to divine the hand of God in life on Earth – that is, that life is the product of intelligent design rather than the result of evolution by the “blind watchmaker” of nature. One of their aims is to rid science of its adherence to methodological naturalism, and to effectively let in the supernatural. This is clearly stated in the following comments regarding the “Mere Creation” conference, held at Biola University in La Mirada, California in 1996, which several design proponents were involved in:

Since the founding of Christian Leadership Ministries in 1980, we as a ministry have been concerned with what Dr. Charles Malik called “the two tasks” of Christians. The first and primary task is the ministry of evangelism and discipleship; the second is changing the thinking and climate of the university and culture. Both tasks are included in Christ’s great commission to

go and make disciples (Matthew 28:18-20), because in teaching people to observe everything Christ commanded, we must teach them to love God with all their mind as well as their heart.

The Mere Creation Conference on Design and Origins last month was a part of the second task. Our goal was to conduct an academic conference on the origins issue for leading scientists and scholars who reject naturalism as an adequate framework for doing science. We wanted to challenge the paradigm which reigns in the university and culture today – the scientific naturalism which proclaims that nature is and has always been an absolutely closed system of material cause and effects – and explore the possibilities in the concept of intelligent design. [1]

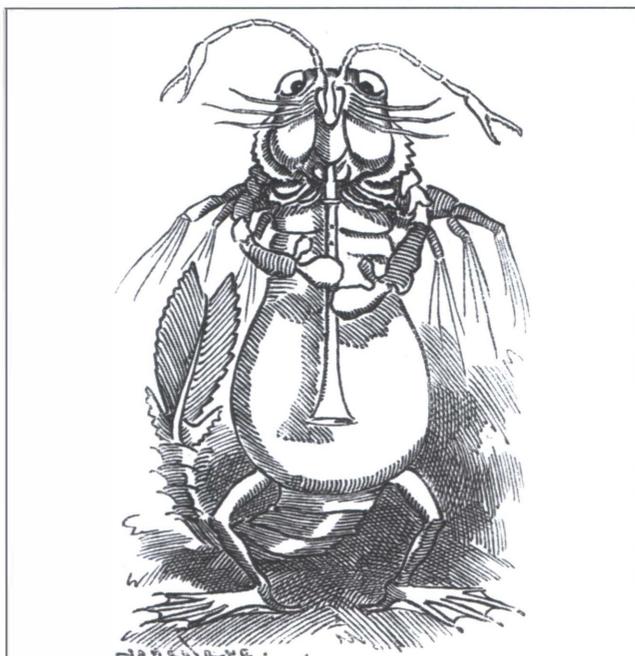


God creates the world.

Although religious belief may be the motivation for the movement, adherents' claims should not be dismissed without critical examination. However, it does signal a need to be vigilant: the movement has more to do with advocacy than science [2]. Indeed, even though intelligent design has not been taken up in science as a legitimate theory, some people have already started talking about teaching it in school science classes. It is worth noting that the movement is predominantly an American phenomenon. In America there has been some success at getting creationism taught in school, and even in banning the teaching of evolution (though the 1999 decision by the Kansas school board to eliminate evolution from the state-wide science curriculum was overturned in early 2001). It seems that intelligent

design is part of this tradition, but without the reference to the Biblical creation account in Genesis.

Two of the leading lights in the movement are Michael Behe (a biochemistry professor at Lehigh University) and William Dembski (who is a PhD in mathematics and philosophy as well as a Master of Divinity). I will take a look at their ideas and explain some reasons why they fall well short of being revolutionary for science. In this article I can only provide an overview – more technical and comprehensive analyses are available on the Internet.



Darwinian Ancestor

Composing the Song, "For O it is such a Norrible Tail!"

"Our ancestor was an animal which breathed water, had a swim-bladder, a great swimming tail, and an imperfect skull."—*Darwin to Lyell*

Irreducible Complexity

Behe argues that some biological entities and systems have a property known as Irreducible Complexity, and this property is to be explained by design rather than molecular evolution:

Since that time [the 19th century], science has shown that the cell is an extremely complex system containing proteins and nucleic acids and all sorts of miniaturised machines. In my book I go through a number of these machines and argue that Darwinian natural selection cannot have produced them because they have a property called irreducible complexity; that is, they consist of a number of parts, all of which must be present for the machine to work. Irreducible complexity is like a mousetrap which has a number of parts, and all the parts must be present before it can work. [3]

This argument is developed in the book "Darwin's Black Box" in which he examines the biochemistry of

systems such as the bacterial flagellum. Using the common mousetrap as an analogy, he states that removing any part of something that is irreducibly complex will stop it from functioning. We are told that intelligent design should be inferred if molecular evolution is unable to account for the existence of things that are irreducibly complex. Behe claims that his search of the scientific literature failed to turn up any such evolutionary explanations, and thus he concludes that design was involved. It is disputed that no evolutionary explanations are available in the scientific literature [4].

Although he doesn't come out and say "God did it", it is not difficult to see that this is a God of the Gaps argument. Even if contemporary science and ingenuity were unable to provide evolutionary explanations for his irreducibly complex examples, that doesn't mean design should be inferred. One only has to look at history to know that human understanding of nature advances, and God's role as an explanation for the world has diminished.

Behe is also arguing from personal incredulity. That he is unable to envisage, or determine, how an irreducibly complex system could have evolved may well be a reflection on the limits of his imagination and ingenuity rather than an argument for design. This is a point well made in a proposition that the design example of the mousetrap is not actually irreducibly complex [5]. Although it can be a seductive line of argument, a person is on dubious ground when arguing that one's inability to provide a solution to a problem implies there is no solution.

If there are irreducibly complex entities in nature then we should ask "Yes, but so what?"; not all designed things are irreducibly complex. Take a car as one example: removing a headlamp doesn't stop it from functioning. Given that design doesn't necessarily lead to irreducible complexity, Behe isn't providing a useful framework for a better understanding of life on Earth. I wonder if he thinks a designer only produces irreducibly complex things! The pertinent question is, what role the designer(s) played in the existence of life. What is the signature of design (assuming there is one) regardless of whether something is irreducibly complex? This question leads us on to Dembski's Explanatory Filter.

Explanatory Filter

Dembski has discovered what he believes to be a reliable method for detecting design:

The key step in formulating Intelligent Design as a scientific theory is to delineate a method for detecting design. Such a method exists, and in fact, we use it implicitly all the time. The method takes the form of a three-stage Explanatory Filter. Given something we think might be designed, we refer it to the filter. If it successfully passes all three stages of the filter, then we

are warranted asserting it is designed. Roughly speaking the filter asks three questions and in the following order: (1) Does a law explain it? (2) Does chance explain it? (3) Does design explain it? [6]

The example he chooses to explicate the filter is that of Nicholas Caputo, who was accused in 1985 of rigging a ballot when he was a county clerk in Essex County, New Jersey. In 40 out of 41 elections the Democratic candidate was the first one listed on the ballot. The allegation was that Caputo made the ballots in this way to favour the Democrats. Because he claimed to have used a randomisation procedure to determine ballot lines the court eliminated the possibility that a law could explain the ballot line ordering. The word “law” in respect of the filter is not meant in the legal sense, but in terms of a regularity or law of nature.

The probability of drawing the Democrats first 40 out of 41 times is extremely low, such that chance can be ruled out as an explanation if the outcome is what Dembski calls a “specification”. A specification is an event conforming to a pattern, but not an *ad hoc* pattern (also known as a “fabrication”). To illustrate this, consider an archer firing an arrow. If the arrow hit the bull’s eye that would be a specification, whereas drawing a bull’s eye around where the arrow lands would be a fabrication. In the Caputo case the specification is that he is a Democrat, he decided the ballot lines, and as a Democrat he favoured that party by putting their candidate at the top of the ballot almost every time. The ballot line ordering was a highly improbable result by chance, and the outcome was specified, so this example drops through to the design explanation of the filter.

Dembski employs some aspects of information theory for his notion of intelligent design. Roughly speaking, he uses a measure whereby an event contains more information the less probable it is by chance, and vice versa. Information is tied in with specification to give the concept of Complex Specified Information, which he claims can only be produced by some kind of intelligence. He also claims that natural processes are in principle incapable of producing it [7], and that biological systems are examples of specified complexity,

and so they must have been designed rather than be a result of evolution.

A Biased Filter

The Caputo example brings up an interesting point about detecting design. To reliably detect design we

really need to know something about the designers – such as their motives, techniques, and tools [8]. Without that knowledge we face the problem of how to distinguish the apparent design from actual design. Forensic science, the Search for Extraterrestrial Intelligence (SETI), and the identification of copyright infringement are some of the examples Dembski gives for what the filter describes. Ironically though, in all of these examples the designers are known, their techniques and tools are known (or in the case of SETI, inferred from human techniques and tools), and their



motives are known or inferred based on what we know of humans.

Are chance, law, and design really mutually exclusive as the filter implies? The answer is no. Even things we consider to be the result of chance usually involve laws of nature; in flipping a coin gravity is involved (as well as other forces). Design can make use of chance and/or laws. Imagine if Caputo had stayed out of trouble and really used a randomising method for deciding the order of candidates on the ballots. The filter would explain this outcome as chance, but that is true only in a trivial sense – design is involved no matter what specific method Caputo might have employed.

When one is trying to explain something it is limiting and simplistic to apply a filter like this. One might wonder why it is designed to be a net so that anything that passes over the first two explanatory possibilities is deemed to be designed. Perhaps some humility needs to be applied and a box marked “unknown” added for situations where the causal history is not known.

Dembski argues that whenever his filter deems something to be designed investigation demonstrates that it was. This may be true, but obviously only applies to cases where we know who the designer(s) is (typically humans). He uses induction to argue that the filter is reliable when something is caught in the design part of

the net. This seems reasonable on the face of it, but amounts to begging the question – the conclusion is being assumed.

False negatives or false positives are a common problem with testing procedures – this is a reason why the result of medical tests may not be 100 percent accurate. Dembski acknowledges that his filter may produce false negatives because design can mimic chance. However, he claims that it can't produce false positives – supposedly all things it deems to be designed must have been. The filter is not a reliable method of detecting design *per se*; its purpose seems to be to rule out evolution and rule in design.

Eliminating Chance

For the filter to be reliable it is necessary to rule out all possible chance hypotheses. This makes the filter only as reliable as our ability to identify relevant chance hypotheses. Evolution should be considered to be a chance hypothesis, but it may not be possible to do the necessary probability calculations. The danger of appealing to improbability as a means of inferring design is that it is dependent upon current knowledge, and with the origin of life the probabilities are not known for certain. Dembski hasn't provided calculations to go with his bold claims that biological systems exhibit specified complexity and are designed, nor has he shown that the specification criteria applies to them.

Let's consider a thought experiment. A person is in a room with a computer, and he decides to produce the sentence "METHINKS IT IS LIKE A WEASEL". The method for doing this is chosen from the following two options:

Simply type in the sentence

Use Richard Dawkins' Weasel program to generate it [9].

The Weasel program uses a very simple evolutionary algorithm to emulate the concept of cumulative selection. Evolutionary (genetic) algorithms are search techniques based on principles of evolution.

Can the explanatory filter determine if the sentence was the result of intelligent design? Dembski seems to

recognise a problem here. The filter would class the sentence as being the result of intelligent design, yet it could have been produced by a designer or an evolutionary algorithm. He thus talks about "apparent" as opposed to "actual" specified complexity, claiming that Darwinian evolution cannot produce the latter [10]. To justify this distinction he notes that the Weasel program has a 100 percent chance of producing the specified sentence – meaning that it doesn't produce new information.

Notice that to get around the problem a subtle shift has been made, one that doesn't conform to the definition of the filter. The baseline probability comparison is the probability of something occurring by chance. What he's done is to "move the goal posts" to try and get around the difficulty. The probability of a human designer producing the sentence is also very high, but this uncomfortable fact is ignored.

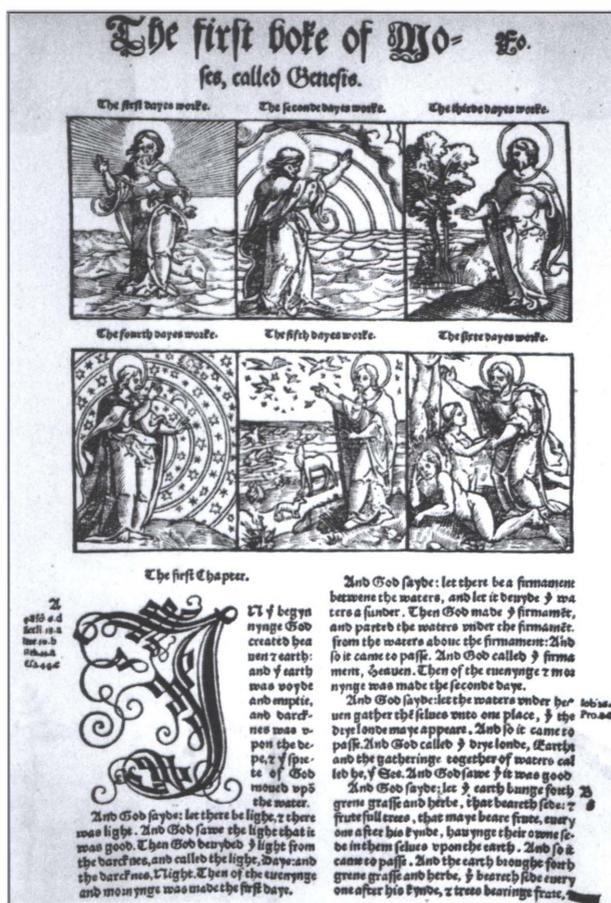
The filter could class as design something that is the result of evolutionary processes. The target sentence "METHINKS IT IS LIKE A WEASEL" was originally the product of intelligence, and is the complex specified information. However, Dembski's methods are meant to detect design without knowing the causal history of the outcome. Introducing the notion of apparent and

actual specified complexity is merely an admission that the filter doesn't work as purported. A spanner has been found in the works, and the result is a repeat of the question begging assertion that only intelligence is capable of producing complex specified information.

More realistic evolutionary algorithms are employed in the field of genetic programming to solve real problems [11]. If the results of such programming techniques are instances of specified complexity then the explanatory filter would fail to distinguish design from the kind of processes found in nature.

Falsifiability

In science an important, though not overarching, principle is that of being able to falsify a hypothesis. Dembski has recently claimed that intelligent design



can be falsified by demonstrating that systems such as the bacterial flagellum could have been produced by Darwinian evolution [12]. However, this is in contradiction to his statement that natural processes are in principle incapable of producing specified complexity.

If the explanatory filter really does not produce false positives then a design conclusion cannot be falsified. Again there is a contradiction: if falsification is possible then the filter can produce false positives.

The issue lurking here is that the filter is sensitive to current knowledge. It is possible that the filter would produce a different result for the same phenomena if applied under different levels of knowledge.

The contradictions highlight the inadequacy of his intelligent design theory. Either intelligent design indicated by the filter cannot be falsified, or the filter is not up to the job. At the heart of the matter is the difference in approach to science which gains knowledge and understanding of the world by discovery, reason, and ingenuity.

Stuck in the Past

The scientific community hasn't taken up the Intelligent Design movement's ideas as a viable theory, despite the movement's grand claims to have discovered something that should have a profound impact on science. No matter, the movement seems to be trying to convert the public instead; they publish books, present material on the Internet, give speeches, and so on. Some in the movement claim that science has rejected intelligent design because many scientists are atheists – a curious position to take since there are Christian scientists who have criticised intelligent design.

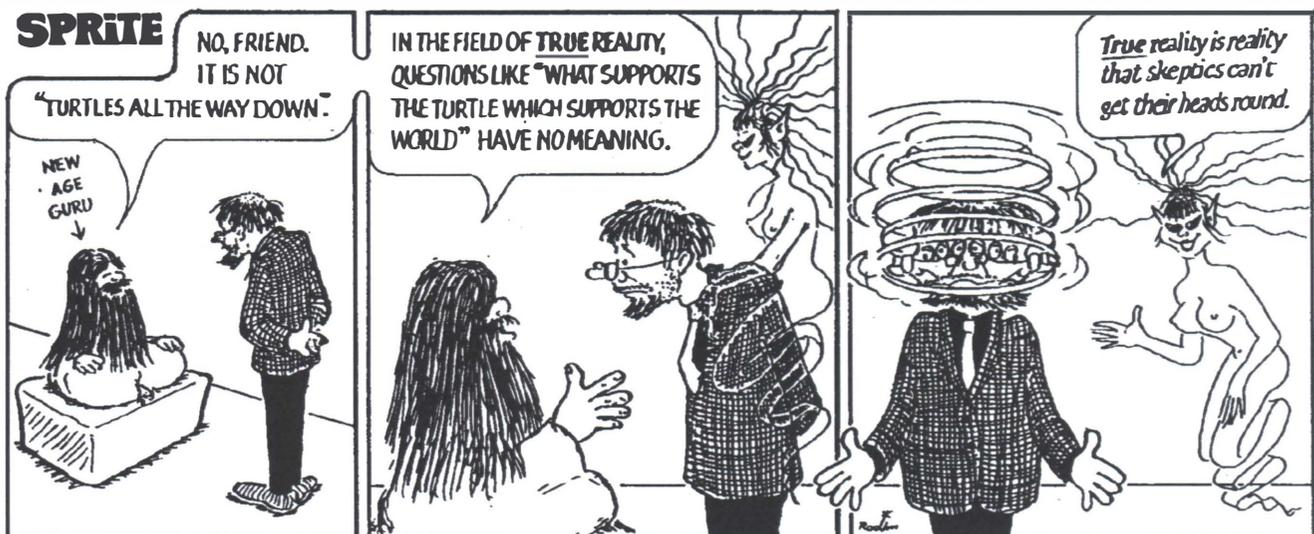
If the door is opened to the supernatural then falsifiability becomes impossible. It could still be argued, by those so minded, that behind ostensibly natural processes an intelligence is at work. Inscrutable designers like God cannot be disproved.

It's a shame that some bright people are on what could be described as a fool's errand by trying to prove that life was created by God. Two centuries ago William Paley failed to provide positive evidence for intelligent design, and his modern day counterparts have also failed. Dembski's work is arguably the most promising of the movement, but it is flawed and no empirical data have been supplied to demonstrate its applicability to biology. Intelligent design doesn't even rate as a scientific theory, let alone one that would explain the observed facts of life on Earth better than evolution.

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4. <http://www.cbs.dtu.dk/dave/Behel.html>
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10. http://inia.cls.org/~welsberr/ae/dembski_wal_19990913_explaining_csi.html
11. <http://www.newscientist.com/ns/971115/features.html>
12. <http://www.discovery.org/crsc/CRSCrecentArticles.php?id=584>

Dene Bebbington is a freelance software engineer. He wrote about Holocaust revisionism in *The Skeptic* 12.2.



Skeptical Stats

- Number of speed cameras in a ten-mile stretch along the A619 between M1 junction 30 and Chesterfield: **14**
- Cost of a pair of “weigh-less” earrings held magnetically in place at an acupuncture point to help suppress appetite: **\$34.95**
- Number of layoffs in the US high-tech sector since December 1999, as of July 27, 2001: **135,925**
- Number of companies in which the layoffs took place: **905**
- Amount offered by the Clay Mathematics Institute in Cambridge, MA, for the solution to any one of seven intractable math problems: **\$1 million**
- Number of Indians infected with HIV: **4 million**
- Per capita health expenditure in India per year, total and AIDS-related: **\$10, 3 cents**
- Amount donated to the Salt Lake Olympic Committee by the Church of Jesus Christ of Latter-day Saints (aka the Mormons): **more than \$5 million**
- Number of hours Rupert Murdoch figures he has left to work in his life, as of February, 2001: **70,000 to 75,000**
- Number of people killed by gunfire every day in the US: **190**
- Percentage of the US economy represented by California: **14**
- Number of smaller states’ economies that is equivalent to: **22**
- Percentage of Japanese people who believe there is a link between blood type and personality: **75**
- Number of miles a Portuguese dog walks to mass every Sunday: **16**
- Number of people who play football (soccer) worldwide: **more than 240 million**
- Length of time a snort of cocaine can change a human’s brain chemistry: **a week**
- Number of cases of AIDS Kenyan pastor John Nduati claims to miraculously heal every week: **1,000**
- Number of new notes and coins that will be exchanged when the Euro becomes real, on 1/1/02: **14.5 billion, 50 billion**
- Age, when felled in 2050BC, of the central oak in Seahenge: **167 years**
- Number of years two Colorado therapists sentenced to serve after a “rebirthing” session killed 10-year-old Candace Newmaker: **16**
- Amount of annual sales, in Britain, of Chinese herbal remedies: **more than £100 million**
- Estimated number of slaves worldwide: **27 million**
- Amount of the winning bid on the Dolce and Gabbana bra Madonna wore during “The Girlie Tour”: **\$23,850**
- Position of Coca-Cola in the world’s top ten most-recognised brands: **1**
- Amount earned in 1998 by the top 400 US taxpayers: **\$44 billion**
- Percentage that represents of overall income: **nearly 1 percent**

Sources: 1 Association of British Drivers 2 Sky Mall catalogue; 3,4 *The Industry Standard*; 5 <http://www.clay-math.org>; 6,7 *Business Week*; 8 *Business Week*; 9 *Harper’s*; 10 *Columbia Journalism Review*; 11,12 *Business Week*; 13 *Independent on Sunday*; 14 Reuters; 15 FIFA; 16 *Nature* 17 *The Observer*; 18 *Daily Telegraph*; 19 *Denver Post*; 20 *Observer*; 21 *Sydney Morning Herald*; 22 Reuters; 23 *Business Week*; 24,25 *Business Week*

Reinventing the Past

Why rely on orthodox historical study when you can invent your own re-interpretation? **Rachel Carthy** looks at the burgeoning free-for-all she calls cryptohistory

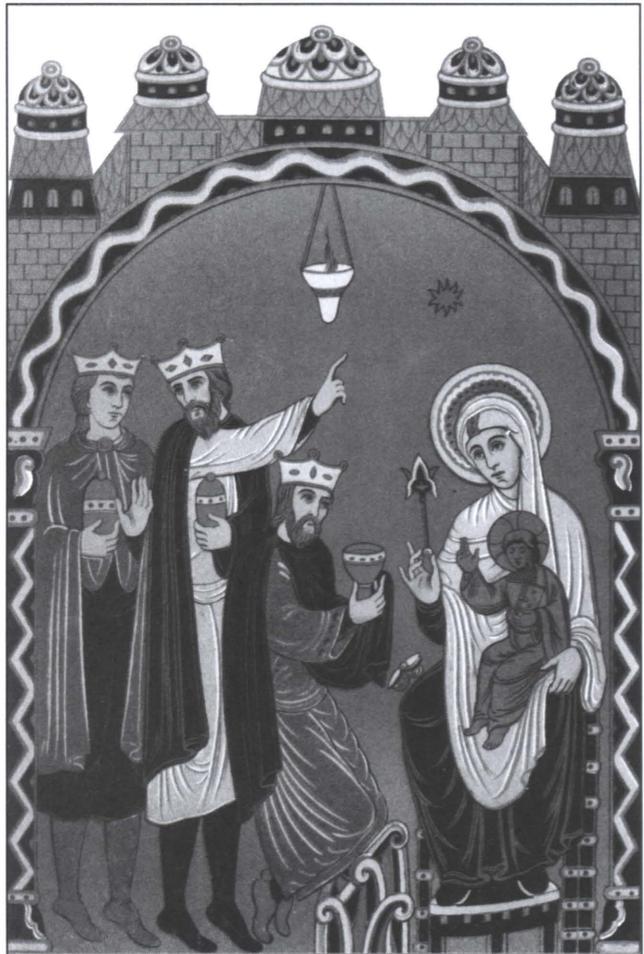
WHEN YOU THINK OF CHESS grand masters, you think, by and large, of thoughtful, rational people. You don't expect to find one speaking out for a very odd brand of historical revisionism. But Garry Kasparov is a high-profile spokesman for New Chronology, a Russian conspiracy theory of history that's gaining a startling amount of credibility there. [1]

New Chronology does have solid mathematical roots. It's the work of a group of notable Russian mathematicians, most notably Anatoly Fomenko and Gleb Nosovski, professors at Moscow State University, building on the work of a man named Nicolai Morozov. While imprisoned for his role in the assassination of Tsar Alexander II, Morozov drew up chronologies demonstrating that the reign lengths and sequences of the Old Testament kings from Rehoboam to Zedekiah were almost identical to those of the Holy Roman Emperors from Alcuinius to Justinian II, implying that these were actually the same set of historical rulers, mentioned in two separate sets of historical records and mistakenly assigned to different dates over 1,000 years apart.

Fomenko and his colleagues have expanded on this by developing the concept of the "dynastic function", the pattern of reign lengths and sequences which can be statistically compared.[2] They claim to have compiled a "complete list of fifteen-ruler successions from 4000 BC to 1800 AD, drawing from all the nations and empires of Western and Eastern Europe, and stretching back into antiquity through Roman, Greek, biblical, and Egyptian history," and say that this shows not only many stretches of apparent identity between the Old Testament and Roman-German history from the 10th to 14th-centuries, but also a single large pattern that repeats itself four times from roughly 1600BC to 1600AD. This, they reckon, shows that "history", as generally taught, is a patchwork of misdated sources, with many historical figures misidentified as more than one person. As examples: Jesus Christ was in fact born in 1064 AD (no, I don't know where they're dating the AD from) and is the same person as Pope St. Gregory VII. Apparently one of the Three Kings in mediaeval religious pictures is often shown as a woman. She, say the New Chronologists, is the ninth-century princess Olga, who converted Russia to Christianity (which, by the way, was identical with Islam until the 16th century).

The mathematics are impressive, though more orthodox historians question the data used for the sta-

tistics. There are many uncertainties even in the standard chronology, and there are claims that Fomenko and his colleagues have selected their data to better fit their theory. Which, of course, they deny. None of that would really amount to much more than an academic squabble if it weren't for the growing political ramifications involved. The theory's more extreme adherents are developing a Russian-supremacist interpretation. They would like to believe that Russia's empire once stretched all over Eurasia.



This is a resurgence of a very old phenomenon, that I've decided to call cryptohistory, mainly because I've been interested in it for quite a while and had to find a term for it [3]. It has close ties to conspiracy theory, since many conspiracy theories involve reinterpretation of history to show how it's been manipulated by whichever cabal of conspirators the theorist deems responsible. *The Protocols of the Elders of Zion*, still in print as supposed fact, is a classic example, claiming to detail the plans of the Jewish cabal who intend to

secretly dominate the world. A browse round the more paranoid areas of the internet will unearth many, many more examples, varying widely in coherence, sanity and basic literacy. [4]

Not all crypto-histories are necessarily conspiracy theories, although a large number do find it necessary to invoke conspiracy of one sort or another to explain why their interpretations aren't widely accepted. But many of them are simply revisions or alternate explanations, and some may even be correct. There seems, for example, to be good historical evidence that the canonical Wicked Uncle of English history, Richard III, was not responsible for the death of his young nephews, the Princes in the Tower, and that in fact they outlived him only to be secretly assassinated by the next king, their brother-in-law, Henry VII. Who, when it came down to writing the histories, had the advantage of better publicists and a kingdom full of people who decided it was better to keep their suspicions to themselves and survive.[5]

Actual attempts to re-date history itself are rare, but the New Chronology isn't the only one. There's an wide spread of them, ranging from Immanuel Velikovsky [6] (as a sideline from his usual planetary demolition derby) and, more recently, David Rohl [7] in Egyptology to a German called Heribert Illig who suspects that Pope Sylvester II added 300 years to the history of Europe, inventing Charlemagne in the process and confusing modern historians by thus creating the

*A man who would
be a man must be a non
conformist; he must hold
Plato at arm's length, say
to him, "You have been
pleasing the world for
two thousand years, see
whether you can
please me."*

—
Ralph Waldo Emerson

period known as the Dark Ages in which not much happened. Unfortunately, Illig's work hasn't yet been translated into English, and since my German is non-existent I can't evaluate this further, though he apparently claims that standard chronology has problems with both carbon-dating and parallelism among European, Indian, and Chinese history that his theory can explain. If anyone who can read German cares to investigate further, I'd be delighted to know *why* Pope Sylvester did this.[8]

Egyptology and Biblical history seem to be the main haunt of re-daters [9], who often try to link

them. Sir Isaac Newton was perhaps the first, and certainly the most famous, to devote himself to reconciling the Bible with other historical documents. Nowadays, Velikovsky and Rohl are the most notable in this area. Velikovsky's second book, *Ages in Chaos*, argued for a shift of about 500 years in the dating of Ancient Egypt, which he believed would bring it closer into line with events in the Bible. This theory was roundly ignored by

*Very few things happen
at the right time, and
the rest do not happen at
all. The conscientious
historian will correct
these defects.*

—
Herodotus, Greek historian,
484?-425 BC, as quoted by
Mark Twain in *A Horse's Tale*

Egyptologists, not least because the events he wanted to bring into line included catastrophic near-misses of the Earth by various careening celestial bodies, but Velikovsky has many enthusiastic followers to this day. Rohl is more scientifically respectable. He advocates, at least in his mass-market publications, a much smaller time shift; re-dating the 21st and 22nd dynasties to run concurrently rather than consecutively. He offers what seems (to me at least) to be convincing evidence of mis-dating. Apparently this isn't an original theory; it's been a minority opinion for years, particularly among European Egyptologists.

The movement towards wider social history in the last century has brought a golden age for crypto-history. Until Marx and Engels famously expanded historical analysis to include social and economic conditions, history was mainly confined to political and military affairs. The rise of feminism has led to the recent prominence of women's history, which has a fringe of its own, most notably in the likes of Marija Gimbutas and Riane Eisler, with evil male-chauvinist Indo-European invaders wiping out primordial Goddess-worshippers and conspiring to enslave women for the past few thousand years [10]. Other groups of people have developed particular interests in their history as an offshoot from and a spur to their campaigns for civil rights – the histories of both black and lesbian/gay people are growing and occasionally controversial fields of study. Again, they have their extremists. Afrocentric history casts Africa as the cradle of civilisation. The Ancient Egyptians were black, and their culture and knowledge was stolen by whites, who then denied and covered up this mass theft [11]. Again, this feeds off recent archaeological discoveries and historical re-evaluations of

African civilisations. Given the sad history of racial prejudice it's very easy to claim a white conspiracy to denigrate (an etymologically exact description) African achievements and Hide the Truth.

History is a subject that's ripe for such reinterpretation. The written records we have are limited and biased – notably, and obviously, towards those people who actually left records, the literate and powerful, who naturally had their own agendas. New perspectives can add valuable understanding, or hint at new possibilities, but the gaps in our knowledge are so large that it's easy to fill them with guesswork and opinions that only reinforce what we want to believe.

This is nothing new, of course. As long as there's been history there have been people putting a spin on it, usually to flatter themselves, their community or whomever happened to be in charge at the time, but

sometimes in pursuit of stranger agendas. Erich von Däniken's reinterpretation of ancient history to include alien astronauts was the 1970s version, but there are plenty of earlier examples (usually Biblical). These include writers such as the rather alarming Comyns Beaumont, who was determined to prove that all the events of the Bible actually occurred in Britain and produced beautiful maps of the Home Counties with place names from Israel and Palestine [12]. I'm also tempted to include Joseph Smith Jr, whose *Book of Mormon* has Jewish tribes battling across the Americas. This apparently puts devout Mormon scholars in a bit of a spot, since the *Book of Mormon* is divinely inspired and therefore unarguably accurate, though unfortunately failing at any point to agree with the archaeological record. Though it is the only theory I've ever seen that accounts for the Yiddish-speaking Indian Chief in Mel Brooks' *Blazing Saddles*.

Another modern version, with plenty of recent publicity thanks to the David Irving/Deborah Lipstadt trial, is Holocaust revisionism. Anti-Semitism is prominent in many cryptohistorical theories, perhaps due to their conspiracy theory links. For instance, many versions of Afrocentrism are strongly anti-Semitic, and the Nazi obsession with reinterpreting history as the preserve of noble, blond ur-Nazi Aryans and scheming Jews is well known. The Anglo-Israelite Comyns Beaumont, mentioned above, was pretty-much overtly

writing to prove that all this Biblical stuff was really the work of noble Northern Europeans. After all, who could God's Chosen People be but the British?

This isn't just playing with interpretations, though; there are wider political implications. Cryptohistory isn't just confined to fringe Web sites. People use history. A shared history, whether it's true or not, is a cohesive force. The rise of social history is entwined with the politics of society – Marx and Engels were the intellectual force behind Communism. The history of femi-

nism, and of social activism in general, is closely bound up with the practice of same – knowing about the struggles of people you can identify with provides inspiration and strength, as well as knowledge. As they say, you have to know where you're coming from to know where you're going. But this can be horribly misused. Look at Communism. Look at



Introduction of Christianity into Russia

Nazism. Read any newspaper, and note how often history is used to justify present atrocities.

History is vulnerable to hijacking by those with agendas of their own, and cryptohistories, with their lack of academic credentials and support, possibly more so. As an example, Rohl's new Egyptian chronology is supported by many who wish to see the Bible as a historically accurate document, a hope that mainstream archaeology in Canaan and Israel doesn't support. I am told that it also delights white supremacists, since his theory has Egyptian civilisation founded by invaders from Asia Minor, who became the modern Jews/Arabs, rather than by Africans.

Cryptohistories often have a great deal of emotional appeal, for various reasons. They can offer simple, easily understandable explanations for complex injustices. Why are women considered inferior? Because the nasty Kurgans invaded and enslaved everyone who didn't think that way.[13] Why am you not powerful, famous and loved as you deserve? Because there's a conspiracy - of Jews, of Masons, of whites, of whichever scapegoat is convenient – against you and yours. They can offer support for the status quo by flattering the powerful, or soothing or sidelining the powerless. They can entertain – the excitement of discovering lost civilisations, the thrill of being one of the few in the know.

Returning to New Chronology with this in mind, it's no surprise that it's so popular in Russia, consider-

ing the present depressing state of the CIS. It gives them a glorious past and more, it gives them a glorious past which has been unjustly and cunningly hidden until rediscovered by brilliant Russian scholars. Apparently this mythical history has become so popular in Russia that some school districts insist that it be taught as truth, and history professors are worrying about an influx of first-year university students who've never learned anything else. And I recently heard that President Putin wants New Chronology to be taught in Russian schools. Given the age-old human tendency to invent the histories we want, and then use them to justify our actions, perhaps we should begin to worry.

Notes

[1] See <http://www.saturdaynight.ca/Articles/TopStory4.asp?ArchiveIssue=19> for an excellent article dealing with New Chronology. There is also a useful resources page at <http://univ2.omsk.su/foreign/fom/fom.htm>.

[2] The originals, in a rather awkward translation: A.T. Fomenko, G.V. Nosovskij. "New chronology and new concept of the english history. British empire as a direct successor of byzantine-roman empire": <http://kulichki-lat.rambler.ru/moshkow/FOMENKOAT/engltr.txt>. Fomenko's bio <http://lnfm1.sai.msu.ru/lat/Zakh/alm-cat/fomenko.html>. Fomenko's book *New Methods of Statistical Analysis of Historical Texts Vols 1: Applications to Chronology*. http://www.amazon.co.uk/exec/obidos/ASIN/0773432388/qid=997428373/sr=1-2/ref=sr_sp_re_1_2/202-5463286-4795048.

[3] The Skeptic's Dictionary (<http://www.skeptdic.com>) has an entry for "pseudohistory" at <http://skeptdic.com/pseudohs.html>. I decided not to use the term, since it only covers the extreme end of the field I'm interested in and some cryptohistories are more respectable and better supported by the evidence than that term would suggest.

[4] For curious readers I recommend Robert Sterling's conspiracy theory clearinghouse at <http://www.konformist.com> for a start, as well as my personal favourite, the egregious ex-footballer-turned-New-Age-conspiracy-guru David Icke's website, <http://www.davidicke.com>, where he seems to be developing some kind of Grand Unified Conspiracy Theory.

[5] Too many books for and against Richard's guilt to list here. Josephine Tey's *The Daughter of Time* (1951) is a good light read, presented as a modern-day detective story using historical evidence. I also like AJ Pollard's *Richard III and the Princes in the Tower* (1991), a well-balanced account.

[6] Velikovsky's books on historical redating are "Ages in Chaos" (1952), *Peoples of the Sea* (1977) and *Rameses II and His Time* (1978). Most of his unpublished work is available on the Internet.

[7] David Rohl: *A Test of Time* (Arrow, 1996) and *Pharaohs and Kings: a Biblical Quest* (Crown, 1997).

[8] Heribert Illig: *Wer Hat an der Uhr Gedreht?* (Econ Verlag, 1999). A discussion of Illig's work from a post-modern point of view: http://www.philjohn.com/papers/pjkd_h02.html.

[9] "The Revision of Ancient History - A Perspective" by P John Crowe (<http://www.knowledge.co.uk/sis/ancient.htm>) is a massive overview of various attempts to redate Egyptology. Rather heavy going, I'm afraid, and no orthodox Egyptologists are represented.

[10] Riane Eisler's *The Chalice and the Blade: Our History, Our Future* (Harper San Francisco, 1988), began the modern pseudo-feminist cult of blaming everything that's wrong with modern society on prehistoric invading Indo-European tribesmen. Dr Marija Gimbutas wrote, among others, *Goddesses and Gods of Old Europe, 7000-3500BC: Myths and Cult Images* (University of California Press, 1982) and *The Language of the Goddess* (Harper San Francisco, 1989), though most of her fellow archaeologists didn't (and still don't) agree with her conclusions. See <http://www.debunker.com/texts/goddess.html> for excerpted arguments against her claims.

[11] See <http://skeptdic.com/afrocent.html> for more on Afrocentrism and its proponents.

[12] Comyns Beaumont, *Britain: the Key to World History* (Rider & Company, 1947). "Jerusalem" is really Edinburgh. Goliath came from Bath. What more can I say?

[13] See Gimbutas, Eisler, as above.

 Rachel Carthy lives a troglodyte existence in a book-lined den somewhere in south-east London. She wrote about Breatharians for *The Skeptic* 13.2.

SKEPTICS IN THE PUB

NOVEMBER 15

DECEMBER 13

JANUARY 17

Speakers: TBA

Skeptics in the Pub meet on the 3rd Thursday of every month at the Florence Nightingale Pub, Westminster Bridge Road. Contact Scott Campbell, (0115) 846 6964, scott.campbell@nottingham.ac.uk.



Rhyme and Reason

Steve Donnelly

Medium Rare

AS A FIRM believer in the scientific method as a means of pushing back the frontiers of human knowledge, I am always interested when I read about research into aspects of the paranormal being carried out at respectable academic institutions by (apparently) respectable academics. In this issue, I'd like to take a look at some experiments that were widely reported in the UK media concerning spirit mediums.

In the *Sunday Telegraph* on 4 March, Robert Matthews, the science correspondent, wrote an article entitled "Spiritualist's power turns scientists into believers." Although, as is his normal practice when writing about paranormal matters, Matthews did seek the views of a skeptic, in this case Chris French, the article gives the overwhelming impression that the experiments produced "startling evidence that some spirit mediums may indeed have paranormal talents." The item was reported in a number of other newspapers and excited interest in the broadcast media as well. The experiments were filmed by the American TV company Home Box Office and, as I understand it, a programme featuring the experiments has been broadcast in the US but I'm not sure if it has yet been shown in the UK.

On a first superficial reading of the 25-page paper complete with histograms, ECG traces and appendices, authored by a group of "real" scientists led by Professor Gary Schwartz at the University of Arizona[1], one could be forgiven for mistaking it for a sound piece of research. A more careful reading begins to dispel this illusion.

The experiments were conducted using two chairs a few feet apart with a screen in between to prevent the occupants of the chairs seeing each other. In one chair sat the medium and in the other the sitter — with both of them being hooked up to equipment so as to provide "19 channels of EEG and ECGs from both of them" — although this didn't seem to contribute much to the "startling results." The medium was then allowed to conduct the sitting in his or her own way restricted to asking yes-or-no questions requiring a yes or no answer could be asked. The sitting lasted for 15 to 20 minutes and, in total, five mediums and two sitters were involved. The results were subsequently evaluated by the sitter using a transcript of the sitting. Each response was assigned a score on a seven-point scale from -3 (definitely an error) to +3 (definitely correct).

Although this may seem fairly quantitative, it really is not. As the authors themselves point out, the same weighting would be given to a correct answer with only two possible responses ("Your father has passed?"), as to one with multiple possibilities ("His name begins with 'M'?") and even to one that was entirely subjective ("He doesn't blame you?"). With such a scoring system, "an average accuracy of 83 percent" may sound impressive, but it is not at all clear what it really means.

On the other hand, when we read that the control group had an average accuracy of only 36 percent, the high scores obtained by the mediums (83 percent correct for sitter 1 and 77 percent for sitter 2) do seem fairly significant, don't they? Unhappily no! A major weakness of the experimental design is the fact that the medium and sitter were only a few feet apart with the medium able to hear the sitter's voice entirely normally. A person's voice can impart a great deal of information to a discerning listener: gender, age, education and even places the sitter has lived for some length of time. Even the words "yes" and "no" can convey subtleties of meaning. For instance, "no" can be pronounced abruptly so that it means "definitely not" or somewhat hesitantly, with a longer vowel sound, which translates as "well not exactly..." These types of subtle information transfer, which don't even show up on a transcript, can then greatly increase the probability of an accurate response to the subsequent question. Had the control group been able to take advantage in the same way then at least it might have made some sense to compare the results. In this case, however, the control group worked entirely off a printed list of "representative" questions and had no contact whatever with the sitters.

All of this may have impressed Robert Matthews but the redoubtable Randi was less amazed, writing in an email: "Since Schwartz has admitted that he's never done a double-blind experiment, insisting that when he does get round to the mode he will improve it to 'triple-blind' — whatever that means! — I will await his implementing proper controls before making further comment." I think I must agree with Randi.

References

- [1] G. E. R. Schwartz, L. G. S. Russek, L. A. Nelson & C. Barentsen. "Accuracy and replicability of anomalous after-death communication across highly skilled mediums". *Journal of the Society for Psychical Research*, 65 (862), 1-25 (2001)

Philosopher's Corner

Julian Baggini



Applied Philosophy

I'M INCREASINGLY SKEPTICAL of the claims made for philosophy's usefulness in everyday living. Alain de Botton's *The Consolations of Philosophy*, for instance, tried to persuade us that philosophy was really useful because it could make us feel better. That he could believe such a thing only goes to increase the suspicion that he hasn't read enough of it. Meanwhile, Anthony Grayling's new book, *The Meaning of Things*, is subtitled "Applying philosophy to life". Grayling is an astute thinker so one must assume that the philosophy he is applying occupies only a small space on his bookshelf.

Then there is the Society for Philosophy in Practice, which among other things acts as a conduit for the view that managers would do a better job if they did not make ontological mistakes about the nature of quality. And yes, that is as implausible as it sounds.

Don't get me wrong. I do think that a greater knowledge of philosophy does have its uses. But let's not get carried away here. It's hard enough to apply straight-forward rationality to real life, let alone philosophy. Consider this case in point. A while ago I found out that London Underground had actually made it impossible for a passenger to rectify an honest mistake. I know this because I made such a mistake and in my Kafkaesque correspondence with them, LU confirmed that, "If a customer makes a genuine error resulting in them not being in possession of a valid ticket, then a penalty fare will be payable."

My mistake was to thoughtlessly wander past the unmanned ticket barrier at Finsbury Park. Arriving at King's Cross station without a ticket, I got issued with a £10 penalty fare notice. In my letter to LU, I thought I'd try putting a clear, rational argument which would result in their withdrawing the fine. My argument was based on a simple analogy.

On occasion I have made a mistake and left a café without paying, or been given too much change in a shop, or have even walked out of a shop with something I have not paid for. A crook does these things deliberately. A dishonest person, on realising the mistake, considers himself lucky. The honest person returns and rectifies the error. This is what I always do and invariably I am thanked by the proprietor. But if you make a mistake on LU, you are rewarded with a £10 fine. Imagine if I went back to a shop saying that I had been given too much change and was then fined an extra £10! Total nonsense, of course.

I threw in some extra complaints to get the moral high ground: the staff operate with no discretion whatsoever and they make customers feel that they are obliged to pay the fine on the spot, when they are not. Finally, I presented the evidence that my lack of a ticket was indeed accidental. If I had been trying to deliberately avoid paying a fare, I would not have chosen a heavily manned and gated station like Kings Cross as my terminus. Second, I would have done what I have seen many others do and tuck in behind someone else at the gates and go through behind them without paying. Third, I would not have queued up at the window-formerly-known-as-excess-fares to try and pay. Fourth, I would not have a whole stash of tickets from previous days and weeks, which I kindly sent, showing I was not in the habit of not paying.

LU was not moved, claiming that the penalty had been levied in accordance with the law. So my next reply used the argumentative technique known as a dilemma. This is a "damned if you do, damned if you don't" argument designed to show the opponent must be wrong. The dilemma was this. Could LU have exercised any discretion in the exercise of this law? If the answer was no – which I was certain it was not – then the law was an ass. If the answer was yes, the question was why did they refuse to exercise it? They had written, "We are not questioning your honesty." So if they did not exercise their discretion when an honest mistake is made, when did they exercise it?

Alas, they were unmoved. They did have discretion, but wouldn't tell me why it had not been applied. "If this information was [sic] made available, there is a possibility that the appeal procedure would be open to abuse," they replied.

So, London Underground can act with discretion, but only it knows the circumstances when it will do so, to stop sneaky people like myself finding out and tailoring our appeals accordingly.

My experience taught me two lessons, neither of which is particularly edifying. First, if you make a mistake, and you've arrived at your destination to find the gate unmanned – just get out while you can. Second, don't try to offer intelligent arguments when arguing with people running public services.

But I wouldn't want to end on too pessimistic a note. London Underground has since scrapped the penalty fares system. Perhaps common sense and rationality do come through in the end. We live in hope.

Reviews



MIND MATTERS

Consciousness: How Matter Becomes Imagination

by Gerald Edelman and Giulio Tononi

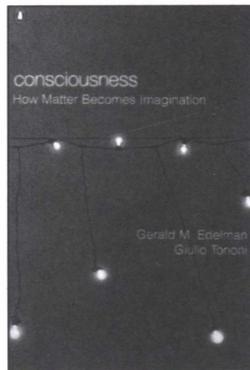
Penguin, £20.00, ISBN 0713993081

If you have ever read (or tried) Edelman's previous books you might expect this one to be equally incomprehensible. It is not. Whether Edelman has learned how to explain his theories at last, or whether Tononi is entirely responsible, the result is a fascinating book with an entirely new take on the problems of consciousness.

Many theories of consciousness imply that certain groups of neurons or brain areas must be the conscious ones, without having any idea what this means. Others, as Dennett has so powerfully explained, assume an impossible "Cartesian Theatre" – a mythical time and place in the brain at which the results of unconscious processing suddenly "become conscious" or "enter consciousness" – again with no idea what this could mean. Edelman and Tononi refreshingly avoid these problems.

They develop a selectionist theory of brain function known as Neural Darwinism or TNGS (the theory of neuronal group selection); with selection operating during development, during learning, and in what they call "re-entrant mapping". They argue that although generating consciousness involves large populations of neurons in the thalamocortical system, consciousness is not a question of precisely which neurons are active, nor of how many, but of the kind of interactions between them.

They tackle what seems like a paradox – that consciousness seems, from the inside, to be both unitary and complex. That is, we cannot subdivide our own awareness, yet each conscious state is extraordinarily informative, being just one out of billions of possible states. Their solution is a mathematical theory resting on the concepts of mutual information and complexity. Consciousness depends on there being a dynamic core of neurons which is functionally integrated yet highly differentiated.



Among the many interesting ideas in the book are a non-representational theory of memory, the concept of the conscious scene as a "remembered present", and the importance of looking at the problem from the point of view of the system itself. The theory is also testable – another reason why this book stands above the huge crowd of vacuous or mysterious theories of consciousness on offer today.

Susan Blackmore

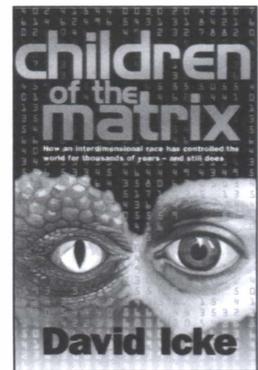
LIZARD POINT

Children of the Matrix

by David Icke

Bridge of Love Publications, £15, ISBN 0953881016

The Holy Grail for conspiracy theorists, as for theoretical physicists, is the construction of a TOE – a Theory of Everything – and David Icke is getting ever closer to the goal. This, his latest book (subtitle: *How an interdimensional race has controlled the world for thousands of years – and still does*), covers innumerable previous conspiracy stories – some familiar (Atlantis, the Templars, water fluoridation, the "murder" of Princess Diana) and some less so (Jayne Mansfield a High Priestess of Satan, Hitler a Rothschild) and shows how all of these are the work of the aliens and human-alien hybrids who walk among us and control every aspect of our lives.



Now, a TOE which invokes virtually undetectable entities with virtually unlimited paranormal powers might be regarded as a bit of a cheat in some quarters – but it certainly allows everything from the Holy Roman Empire to the labels on oil cans to be part of a single story. This is a considerable advance on even the most comprehensive previous efforts. Therefore, when I say that this book is complete baloney, I mean that as a compliment. By comparison, similar books are very incomplete baloney, indeed.

Having said that, I found the book very hard going. Reading it from start to finish makes its overall lack of structure (apart from a broad "ancient to modern"

chronology) apparent and dipping into it makes your head hurt. The gory accounts of ritual child-murders (“thousands, world-wide on main sacrifice days”), the endless “eye-witness” stories of George Bush, Edward Heath, the Queen Mother (choose a celebrity) “shape-shifting” into reptilian form have a curiously deadening effect which is the opposite of the “wake-up call” which Icke presumably intends. Unsurprisingly, most of the references are to wacko web-sites and publications but – if the “mainstream” media are under reptilian control...

John Gillies

RENAISSANCE MAN

The Queen's Conjuror: The Science and Magic of Dr Dee

by Benjamin Woolley

HarperCollins, £15.99, ISBN 0002571390

This fascinating book begins with a gripping introduction in which 64 years after Dee's death a secret compartment in a chest was discovered containing strange books and mysterious papers. Their provenance and value was not recognised and some were used “for the lining of pie tins”. It was not until 1672 that Ashmole, the antiquarian whose collection formed the basis for the Ashmolean Museum at Oxford, received what he had spent years searching for, the remnant of Dee's diaries.



Born in London in the reign of Henry VIII (Protestants were the good guys), Dee survived Edward VI, Mary (Catholics were the good guys and Protestants were burned at the stake with church approval), Elizabeth I (Protestants again), apparently by changing hats at the appropriate moments. Fortunately he was a voluminous diarist, and the papers that survived, translated from Latin, Greek, and alchemical symbology, give us a rather complete picture of this curious man as scholar, mathematician, magician, spy, political adviser, calendar revisionist, astronomer, astrologer, navigator, in the days when “astrologer, mathematician and conjuror were accounted the same things”.

We also learn of his lifelong dependence on “skryers” (spirit mediums), several of whom he harboured along with their families in his own household. These men duped not only him but also many of the nobility and intelligentsia of the time with their purported conversations with spirits and angels. Perhaps the most notorious of these was Edward Kelly who has 48 entries

in the index and was so competent at his job that at one time he persuaded his host that the angels wanted Dee to engage in a little wife-swapping with him.

Copious notes (35 pages), an 11-page bibliography, a four-page chronology, and a 14-page index complete the book and make it a scholarly reference as well as an extraordinary insight into the intrigues, scams, and scandals of the age.

Frank Chambers

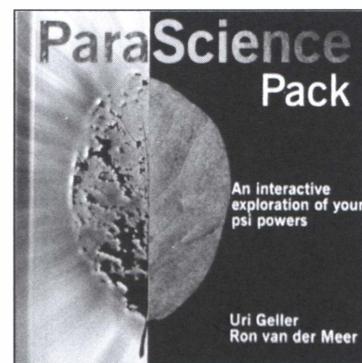
POP-UP TOSH

ParaScience Pack: An Interactive Exploration of Your Psi Powers

by Uri Geller and Ron van der Meer

Van der Meer Publishing, £29.99, ISBN 1902413520

It's not every book that comes complete with its own dowsing rods. Not to mention a scrying disk, a crystal supplied by a “crystal healer” and various bits of esoteric paraphernalia for testing your psychic powers. It includes instructions on how to see your own aura, and quizzes you can do to find out whether you're psychic and whether you've ever been abducted by aliens without knowing it. I worked my way through the various exercises and questionnaires and discovered that I'm not psychic, and have never been abducted. No surprises there. Though maybe I didn't give some of it an even chance – I must admit that my flooded back garden in a rain-storm is not the ideal place or time to give dowsing a fair trial.



Joking apart, this book offers a bizarre and fascinating introduction to what Geller calls parascience and others might call pseudoscience. Clearly (if rather credulously) written, the book sets out the basic concepts behind faith healing, auras, spiritualism, reincarnation, graphology, firewalking, palmistry, astrology, levitation, out-of-body experiences and a host of other supernatural subjects. Hardened skeptic though I am, I have to admire the depth of research that has gone into the book, and the clear and concise way in which the subject matter is presented.

And the book is beautiful. Ron Van der Meer specialises in what are known as “pop-up books” but this is a totally inadequate description. His wonderful three-dimensional paper sculptures leap out of the page and amaze the reader with their beauty and

complexity. Regardless of context, they are astounding and stunningly effective. Shame I can't say the same about the dowsing rods.

Chris Willis

POWER LEAVES

Seeds of Change: Six Plants that Changed the World

by Henry Hobhouse

Papermac, £12, ISBN 0333736281

Not a new book, having been first published in 1985 before reappearing in paperback with an increase from five plants to six. Perhaps the world changed a little more in the intervening years. So what is it about quinine, sugar, tea, cotton, the potato and coca, that is so world-changing?

I expected a popular botanical science book with perhaps a bit of geography and economics thrown in for good measure. In fact it's a quite remarkable work with perhaps the strongest emphasis being on the broader sociological impact of these plants from their earliest discovery to modern times. The linking factor in nearly all cases is slavery, serfdom or its equivalent in this country at the time of the Industrial Revolution, which the author assesses as worse.

The links with outright slavery are perhaps most obvious for sugar and cotton but there are some strange mixtures of good and evil, for example in the use of coca leaves among Peruvian silver miners working at 14,000 feet in the Andes in the 17th Century. A handout of leaves every 45 minutes by the mine owners kept altitude sickness at bay and provided a boost of energy which meant the miners needed about 25 percent less food, a considerable cost saving. And of course it kept them content. Good or evil?

Hobhouse manages to quantify economic parameters which one doesn't normally consider; the number of slave lives per ton of silver produced for example. But it's not just a depressing book about human oppression. The economic achievements of the early trade, particularly in sugar, tea and cotton come through vividly, not to mention the human benefits flowing from the use of quinine. But even in the early days of quinine the exploiters and charlatans were active with adulteration and selling "the wrong kind of quinine". And of course "the church" had its finger in the control and exploitation of most of these plants.

Barry Stuttard

ECTOPLASM AND FASCINATION

Hellish Nell: Last of Britain's Witches

by Malcolm Gaskill

4th Estate, £15.99, ISBN 1841150192

In March 1944, Scottish working-class spiritualist Helen Duncan was tried at the Old Bailey and sentenced to

nine months imprisonment under the Witchcraft Act of 1735. Duncan had given séances at which she had supposedly divulged secret military information, endangering Britain's war effort. Malcolm Gaskill, a Fellow of Churchill College Cambridge, has made a detailed study of the woman in this strange case.

Duncan's trial became a *cause célèbre*. The charge seemed absurd. In the middle of the 20th century, how could the British Establishment make itself ridiculous by charging someone with witchcraft? Duncan's supporters felt there was a good hope that she would win her case. But Duncan's defence counsel, spiritualist Charles Loseby, scored a spectacular own goal. He called 45 witnesses to give accounts of Duncan's séances, in the hope of proving that she was a genuine medium. As Gaskill comments, "far from being overwhelmed, the jury were bored rigid." Perhaps they were also appalled by the number of credulous people who had handed money over to Duncan in exchange for "supernatural" revelations. Duncan was found guilty. As she was led to the cells, she collapsed, screaming "Oh God! Is there a God? I never done it."

This was the culmination of a strange career that Gaskill examines in intriguing detail. Living in an Edinburgh slum with a disabled husband, Duncan's health was ruined as a result of bearing eight children, only six of whom survived childhood. Charging for séances enabled her to keep herself and her family alive. At her séances, spirits supposedly rapped out messages in Morse code, and materialised out of ectoplasm which looked suspiciously like white muslin. Gaskill's admirably non-judgemental account of her life and career makes fascinating reading.

Chris Willis

THEORIES OF EVERYTHING

Lucifer's Legacy

by Frank Close

Oxford University Press, £8.99, ISBN 019866267X

Lucifer's Legacy is as much a history of particle physics as it is a description of symmetry and asymmetry in the universe. The book has its origins in the Tuileries Gardens in Paris when the author, Frank Close, noticed the otherwise perfect symmetry of the parks was broken by a headless statue of a devil, the Lucifer of the title.

From here, Close sets off on a metaphorical journey in search of a unified, perfectly symmetrical physical universe. It is a slightly contrived starting point but he rapidly leaves it behind and launches into one of the most enjoyable romps through the history of sub-atomic physics I've read. He pulls together some of the best stories: the Curies' purification of radioactive elements; Henri Becquerel's work on X-rays and JJ Thomson's discovery of the electron, and he tells them well. He has an

easy way with metaphor and I found myself understanding again concepts that I already thought I knew. My only quibble was with the biological aspects of asymmetry. Close is not a biologist and sometimes that showed. For example, at one point he describes DNA bases as amino acids (they're not) and says that amino acids link together via their side chains (they don't). But I suspect that only a picky ex-biochemist like me will be bothered by these very minor errors.

The second half of the book gets to grips with the concept of symmetry in physics and in particular the unification of the four forces of gravity, electromagnetism, strong nuclear, and weak nuclear. Once again, Close's easy writing style and eye for metaphor makes these difficult concepts accessible and I came away with a clear vision of how and why modern physics is trying so hard to create a Grand Unified Theory of Everything.

I read this book on the train and was regularly disappointed when my short daily journeys ended. However, public reading also led to one of my more unusual commuting experiences. Many people took a second glance at the title but one woman stared in horror as she realised what I was reading. She had a Bible open on her lap and spent the rest of the journey peering at me as if she expected me to grow horns.

The book offers very little in the way of answers, which I found a relief both because science is more about questions than answers and also because those answers are simply not available. I would recommend this to anyone who has even a passing interest in why modern particle physics has evolved to its current state. It's also a good book to offer to anyone who wants a clear summary of some of the most important discoveries in physics; most of them are there.

My final thought comes from the second paragraph of the book in which Close declares that he is not going to write a "seamy [*sic*] pot boiler". Even though *Lucifer's Legacy* is a good read I have to report that this is not a Jackie Collins bonkbuster. But what's been bothering me for days is this; Close is a physicist so surely he realises that if a pot boils it steams?

Toby Murcott

HEADSTUFF

The Private Life of the Brain

by Susan Greenfield

Penguin, £5.99, ISBN 0140264914

Susan Greenfield is the neuroscientist from Oxford who is already very well known as the presenter of the BBC series *Brainstory*. This book takes us on a further journey trying to understand the elusive workings of the human brain.

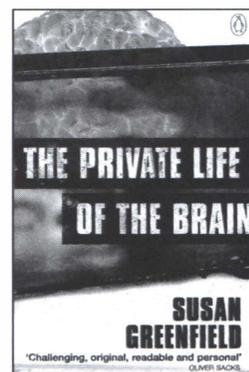
Starting from a summary of what is known of the workings of a normal adult brain, she takes us to the

brain of a child, a junkie, a nightmare and a depression to come to general conclusions and hypotheses of what makes us tick, what is a mind, what is consciousness. Is mind, reason or "self" to be explained as the extent of the active neural network? What can disturb the normal functioning of a brain? Any normal person needs a balance between feelings, emotions and mind or reason.

Why do alcohol and many drugs as well as dangerous activities give pleasure, in many different ways but with a similar underlying mechanism? What do calm pleasure and excited pleasure have in common? Why does it take only seconds to feel the action of nicotine while the effect of Prozac takes weeks? How far are we pre-programmed to have instincts? Are schizophrenic and depressed brains two opposites on the spectrum of too much and not enough consciousness, meaning cortical control of emotions? Are fear and pleasure as close as twins and is the difference between them just a little bit more of dopamine? Why are pain and depression also twins? Are fear and pain mutually exclusive? Is schizophrenia comparable to dreaming? What happens in the brain when laughing, when meditating?

Can all this be explained by a tilting of the balance between the "mind" and feelings? Will the discovery of new peptides bring more insight? The answers she proposes to those questions range from well-established facts to daringly hypothetical. Brilliantly written, thought provoking but not easy to read. Warmly recommended.

Willem Betz



THE END OF SCIENCE

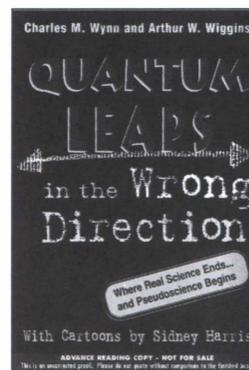
Quantum Leaps in the Wrong Direction: Where Real Science Ends . . . and Pseudoscience Begins

by Charles M. Wynn and Arthur W. Wiggins

Joseph Henry Press, £12.95, ISBN 030907309X

Wynn and Wiggins are American university professors, of chemistry and physics respectively, who aim to provide accessible, user-friendly guidelines that will help laypeople tell science from pseudoscience. They explain in considerable detail how scientific method works, contrasting its (somewhat idealised) principles with the ways of the dark side: subjective measurements, appeals to emotion, unfalsifiable hypotheses, and the rest.

Five of their nine chapters comprise a whirlwind tour of



“the five biggest ideas of pseudoscience”, identified as UFOs/abductions, body/soul detachability, astrology, creationism, and psi. A further grab-bag of oddments follows: Bigfoot, Nessie, SHC, crystals ... *Skeptic* readers will recognise the examples.

Though worthy and well-meaning, our professors are unlikely to win the hearts of many irrationalists. The authors make useful points, but compressing so much into 214 pages (plus index) tends to reduce solid refutations to assertions, which in the eyes of untutored readers may resemble those arguments from authority and dogma that we deplore in pseudoscientists.

Some tactical issues are worth noting. Announcing *before* detailed examination that the “five biggest ideas” will prove to be “riddled with flaws” may be appropriate for a scientific paper, but to laymen it smacks of prejudice. Newton’s law of gravitation would be falsified if an apple moved upward from the tree, the authors claim, having presumably never seen a branch buffeted by strong wind and losing an apple on the upswing. And it seems off-target to attack “scientific creationism” with hoary arguments about the logistics of Noah’s Ark, since modern creationists are smart enough to avoid Ark claims in favour of pot-shots at the fossil record.

Readable and likeable, but less persuasive than it might have been.

David Langford

ANECDOTAL AMAZEMENT

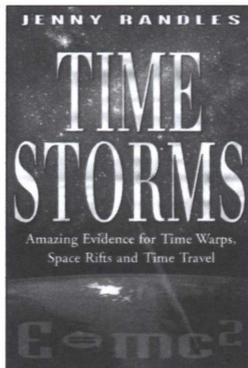
Time Storms: Amazing Evidence for Time Warps, Space Rifts and Time Travel

by Jenny Randles

Piatkus, £17.99, ISBN 0749921595

When you make extraordinary claims, you need extraordinary evidence. So why is the introductory story of a “time storm” so vague? There is no specific “when”, just sometime after World War II; no “where”, just somewhere in the Himalayas; and no “what”, just a red cloud and a feeling that time stood still. All this as a recollection “decades later” by a lady with “failing eyesight and deteriorating health”. Her “sincerity” and “mesmerising recall” are praised, but whether such memory is accurate and precise is not considered (p. 1).

The first part of the book is devoted to brief case histories of strange clouds, glowing mists, tingling bodies, altered states, anti-gravity events, floating



cars, jumps through space, trips through time, and dis-oriented people who are “not all there.” (p. 77) Most stories are sourced to UFO publications and archives, to interviews with and letters to the author. In other words, they are difficult to check.

In part two the author refers to quantum physics, Heisenberg’s indeterminacy principle, and chaos theory to show that “relativity, far from precluding time travel, in some ways almost makes it a certainty” (p. 106) and “perhaps this confirms mystical ideas that our consciousness must exist in a timeless, spaceless, realm and only our material bodies are locked into the permanent illusion that time flows in a linear way.” (p.110) Perhaps, maybe, it could, it might if I wish it to be... “conclusions must be tentative.” (p. 225)

Among all the could-be’s and perhaps’s, the author doesn’t seem to know either.

Nevertheless, she tries to convince us that time warps and time travel not only are possible, but are everyday phenomena. It could be I don’t believe a word she says.

Wolf Roder

DEFINING HUMANS

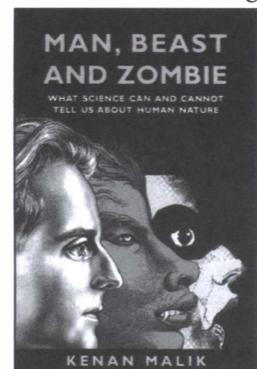
Man, Beast and Zombie: What science can and cannot tell us about human nature

by Kenen Malik

Weidenfeld & Nicolson, £20, ISBN 0297643053

On the shelf above me at this moment is a book entitled *The Biological Bases of Behaviour*. Nothing exceptional or controversial about this; science has long sought to reverse-engineer human and animal behaviour and explain it in terms of physiology, biochemistry and, latterly, genetics. Fundamental to this approach has been the rejection of dualism, the splitting of life into “mind stuff” and “body stuff”. While this materialist approach has been enormously productive, particularly over the last 50 years, it has brought with it profound and seemingly intractable philosophical questions. For example, is biology all that is needed to solve the riddles of human behaviour and personality? And are we on the verge of having to abandon any idea of uniqueness?

Are we simply living out a script already written in our genes, originating with our hunter-gatherer ancestors many thousands of years ago and with the sole objective of maximising our reproductive potential? Is



free will simply a metaphysical abstraction? *Man, Beast and Zombie* is a bold and wide ranging attempt at discussing the attempts by contemporary scientists and philosophers to tackle these questions.

Malik, a former neurobiologist and research psychologist, examines the arguments of both the proponents and opponents of sociobiology and evolutionary psychology as well as philosophers, cognitive psychologists and workers in artificial intelligence, and questions whether the differences between them are always as great as the fierceness of their quarrels over what it means to be human might suggest. To give a condensed but intelligent account of competing scientific ideas, place them firmly in their social and political context and supply a thoughtful commentary on a subject like human nature is a difficult trick to pull off but Kenen Malik manages it rather well.

The notes and references are comprehensive and the bibliography utterly daunting.

Mike Hutton

BRAINS FOR BEGINNERS

Mapping the Mind

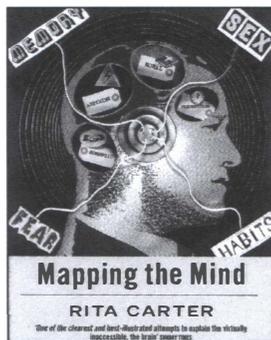
by Rita Carter

Phoenix, £8.99, ISBN 0735810190

This beautiful book can be unreservedly recommended to anyone who wants a non-technical guide to brain research. It is superbly illustrated with clear and colourful diagrams and brain-scan images, and, apart from the pictures that adorn the start of each chapter, eschews the page-padding artwork that clogs up the pages of *New Scientist* and other popular science publications.

Certainly it is a substantially better buy than Susan Greenfield's *The Human Brain: A Guided Tour*, a work devoid of illustrations and often less than lucid.

Needless to say, this comprehensive round-up of scientific theories and findings will provide many useful items for those who find themselves arguing against dualist or mystical accounts of the mind. Concluding the book, Carter writes: "As the studies in this book show, when we look inside the brain we see that our actions follow from our perceptions and our perceptions are constructed by brain activity. In turn, that activity is dictated by a neuronal structure that is formed by the interplay of our genes and the environment. There is no sign of some Cartesian antennae tuned into another world." (p.331)



The sound combination of Ockhamite parsimony and open-minded awe is well expressed in the book's final sentence: "There is no need for us to satisfy our sense of wonder by conjuring phantoms – the world within our heads is more marvellous than anything we can dream up."

A very worthwhile addition to the library, and an ideal gift.

Paul Taylor

NO REMAINS

Gods of the New Millennium: Scientific Proof of Flesh & Blood Gods

by Alan F Alford

Hodder & Stoughton, £8.99, ISBN 0340696133

The plot of the story is simple. Ancient civilisations report their gods were flesh and blood, who created humans in their own image. Alford is prepared to explain gods as ancient astronauts, and humans as a genetic engineering modification of *Homo erectus*. This is not exactly a new idea. A considerable literature on this pseudo-history exists, and Alford quotes liberally from von Däniken, Hapgood, Sitchin and others.

To pull ancient literature together a scholar ought to be able to read Sumerian cuneiform, Egyptian hieroglyphs, biblical Hebrew, classical Greek, Maya pictographs, and Inca quipu. Alford gives no evidence of having mastered any of these, but relies on translations. It is bizarre to interpret gods, where the translators who can actually read the originals see mythology.

The author posits a world wide highly technological civilisation starting with the arrival of the gods in 270,183 BC (p. 595), that is. not during the last ice age, but three glacial advances back. The age of the gods lasted until around 200 BC. Alford's time line (pp. 595-598; 662) includes star wars of the gods with map (Fig. 11), rebellion of lesser gods, nuclear explosions, Noah's flood and just about every event mentioned in ancient history and archaeology. Yet, this activity has left no more than some heavy stone buildings, the pyramids, Stonehenge, Tiahuanacu, and of course the Nazca lines.

Why can't we find technologically unambiguous remains of this history?

To add weirdness to delusion, Alford added a foreword to this reprint of the 1996 edition, which informs us he no longer quite believes what he wrote. His thinking has taken a "dramatic U-turn" (p. xi). He now believes "a deeper level of meaning" is hidden behind the mystery of the ancient gods. He doesn't inform us what that might be, and I'm unwilling to ask.

Wolf Roder



L I T T E R S

More on Foo fighters

Steuart Campbell is dubious that some sightings of glowing “foo fighters” in WWII may be accounted for by ball lightning. I wholeheartedly agree that the majority of reports were probably astronomical objects, but I maintain ball lightning was responsible for some of the closer encounters (*The Skeptic*, 13.3-4).

Firstly, he suggests that ball lightning would only be observed on cloudy nights. As I made clear in the article, the effect was probably artificial ball lightning caused by high-energy radio-frequency (radar) beams intersecting. These days astronomers who routinely create “guide stars” of glowing air in the upper atmosphere for reference purposes; lasers are used for these, but the same effect can be achieved with radio frequency. (See “Radio plasma fringes as guide stars: tracking the global tilt” by Erez N Ribak at <http://physics.technion.ac.il/~eribak/plasmtails>.)

Secondly, he suggests that natural ball lightning is a “phenomenon of doubtful existence”. This used to be the case but it is now firmly established, following repeated sightings by atmospheric scientists. Ball lightning effects in electrical equipment, including submarine batteries and power stations, are also well documented. The case of ball lightning burning a hole through an isinglass screen is quoted in Chapter 15 of Martin Uman's *All About Lightning*.

What we still do not have is an agreed explanation of the physics underlying ball lightning. There are several competing theories, ranging

from burning filaments of carbon or silicon to electromagnetic knots and lasing effects in the atmosphere. Time will tell which, if any, is correct. Mr Campbell may remain skeptical about any phenomena he chooses, but I doubt he will find many atmospheric scientists siding with him on this issue.

Believers in paranormal phenomena point to ball lightning as a phenomenon once rejected by science as a myth but later accepted. They suggest that ESP, flying saucers etc could follow. My view is different. That phenomena are accepted as real when enough evidence is accumulated (even without a good theoretical support) shows that science is flexible and open-minded, and does not simply reject inconvenient facts. If other phenomena are not accepted, then it is the evidence which is failing, not science.

*David Hambling
by email*

Searching for rural skeptics

No sod warned me that being a skeptic was harder work than ploughing. I'm not complaining, but since becoming skeptical I'm constantly knackered, what with all the thinking and arguing with meself.

Now, I don't want to force an opinion on anyone. Hell, no. I just want to say, “Here, wait a minute, think about that, are you sure?” You know the kind of thing. Like the stuff you say to a bloke in the pub who tells you that that David Icke must be right ‘cos he was on the telly.

For them that are urban sophisticates, who've got this email thing, or one of them computers that are on the “web” (sounds like something you get stuck in to me, but there you go) things must be pretty plain going, ‘specially for the educated ones ‘mongst ‘em.

But what about us simple folks in the middle of nowhere? I reckon there's even more idiocy ‘ere than in the cities. Specially yer crystal-gazer vibration-twiddling healer-dealers, and yer psychic counselors, and yer tarot dowzers and such. It's cheap to live here, innit? It's like California with cowpats.

So what's a simple man to do? You can only write so many letters to the local papers! The local library, bless ‘em, don't help much, what with their “Myth and Mystery” shelves. One copy of Carl Sagan's *Demon-Haunted World* and an unopened Stephen Jay Gould ain't no match for Eric von Mannikin and Grahame Cockhand, or whatever their names are. You know what I mean. Even the local college does odd stuff, like “Feng Shui Your Tractor Shed” or “Reflexology for Battery Hens.” Much more of it, and I'll be seein' pigs flyin' in seven dimensions.

Any rural skeptics out there want to drop me a line, I'd appreciate it. Help preserve a skeptic's sanity. You know it (probably) makes sense.

*Norman Paulmore
Sleaford, Linc*

Blind leading blind

I was amazed to see the authors quote, in the article “The Enigma

of Florence Cook” by Liz and Louie Savva (*The Skeptic*, 14.1), a book by Montague Summers in favour of their argument against spiritualism.

“Doctor Summers” has to have been one of the most credulous people of the last three centuries, believing all the incredible charges made in the Middle Ages against witches and the Knights Templar, etc., accepting without question folkish accounts of vampiricism and werewolves. Summers’ claims to be a priest were also extremely dubious and his books are full of dubious scholarship and quotes from unverified sources.

Quoting Summers in support of one’s arguments ill becomes *The Skeptic*.

*James Voller
Liverpool*

Rationally mystic

The argument that belief in God is a matter of faith, used by Elsie

Karbacz, is a misuse of the word “faith”. Faith is not a means of deciding between true and false, but the ability to trust what you have decided to be true.

The problem is that we have lost trust in reasoning from first principles. Most materialists do not know the philosophical explanation for mysticism, which is that consciousness is the only thing we know and we only know material things as functions of consciousness. This means that the laws governing material things are actually laws governing a set of perceptions. A true skeptic cannot therefore assume materialism to be true. Unfortunately, while this enables us to create a religious view which is rationalist, it does not enable us to put the Bible into a rationalist view.

Anti-rationalism encourages violence, the influence of which

can clearly be seen in fantasy fiction. Nothing should be used to give it an excuse. As a mystic, I would rather join with atheists against anti-rationalism than with irrational mystics against materialism.

There is a tradition of rational mysticism going back to Plato who tried to prove everything. Socrates was a rationalist mystic. He was executed by religious people.

The explanation of sleep paralysis put forward by Nick Rose (“Something Wicked This Way Comes!”, *The Skeptic*, 14.1) does not explain a sense of weight, of being pulled, or of an evil presence. The problem with exploring occult abuse is that those who believe in the occult do not want to admit it can be abused. No-one wants to expose occult abuse.

*David Kay
Manchester*

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The Skeptic Library Scheme

Dr Richard Wiseman

In September 1998 I visited my public library to find out some good books on how to play poker. Whilst there, I checked out the material on the paranormal. I was horrified to find endless volumes promoting the existence of paranormal phenomena, and almost nothing presenting a more skeptical perspective. Surveys suggest that approximately 33 million people in Britain hold a library card, and around 30% of these regularly visit their local library. The majority of these report using the library as a major source of reference material on a wide range of non-fiction topics. When it came to psychics, mediums, UFOs and Bigfoot, they were only hearing one side of the story.

Toby Howard, Steve Donnelly, Wendy Grossman, Mike Hutchinson and I came up with a simple scheme to tackle the problem. We figured that if it were somehow possible to get *The Skeptic* into local libraries then a huge number of people would have access to less

credulous articles on the paranormal. We asked readers to sponsor a twelve-month subscription to a library, or libraries, of their choice at the reduced rate of ten pounds per year. The response was heartening. Within a few days the subscriptions started to arrive and after a few weeks it was obvious the scheme had been a success.

Eventually, we received sponsorship for almost 200 libraries. The subscriptions were spread throughout the entire UK, and included the main libraries in almost every county. From Aberdeen to Brighton, Cardiff to Norwich, Belfast to London, we had the country covered!

We would like to thank everyone who supported the project and helped promote skepticism to a huge number of people.

A few months ago I revisited my local library. The good news is that they had *The Skeptic* on display. The bad news is that they still didn’t have any good books on poker.

Dr Richard Wiseman is a reader in public understanding of psychology at the University of Hertfordshire.

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