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NEXUS

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End of the Oil Age?

**Death by Medicine:
the shocking statistics**

**Soy Allergies:
the hidden epidemic**

Proof that plants 'feel'!

Mysterious origins of oil

The Henoah Prophecies



• Global Scaling Theory • UFO Whistleblower •

NEXUS

NEW TIMES MAGAZINE

Volume 11, Number 5

AUGUST – SEPTEMBER 2004

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STATEMENT OF PURPOSE

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Editorial

Well, we're still here! Despite the fears of many asteroid and gossip watchers, humanity has survived another round of doomsday rumours. For those who came in late, I'll explain briefly. Over the last few months, various alleged whistleblowers have emerged, claiming to have knowledge of upcoming asteroid strikes upon Earth. A couple of these sounded most convincing, and the jury is still out on how much is rubbish and how much is real. The first round of announced impact dates was late June, which yielded many meteorite showers and impacts but no "big ones", obviously. According to these whistleblowers, this is just the beginning of more to come. I guess we shall see. However, there is one asteroid that we *do* know has a near miss-date with Earth, and that is *Toutatis*, which will near-miss the Earth (we hope) on 29 September this year. I say "we hope" because *Toutatis* has a most erratic orbital path through the solar system. Remember, of course, that the world's experts have already announced that if they *do* see a doomsday asteroid, they will not be telling us mere mortals about it!

Back in the NEXUS office, we have so many great articles (again) for this issue that I could just burst with enthusiasm over them.

First up, we have a couple of articles on Oil, both of which should be widely read by anyone trying to get a handle on geopolitics. Mike Ruppert is still pounding the podiums with his message that global oil production has already peaked and we are now witnessing the scramble by the superpowers to secure what is left—and attempt to get away with it in front of their competitors. Prof. Siegfried Tischler (who's to speak at the NEXUS Conference) examines the origin of oil. You probably think that oil comes from decaying dinosaurs and swamps, etc., but you'd probably be wrong. Prof. Tischler has lifted the lid on a secret that not many people dare discuss.

Next we have "Death by Medicine", an article that should make everyone's blood boil and should make medical professionals recoil in horror and disgust at themselves. You have probably heard the rumours that more people die from medical mistakes than car accidents, etc. Well, the statistics are much, much worse than that, and they apply to developed countries like the USA, Canada, Australia, UK, New Zealand, etc. In the USA, the figure is the equivalent of six jumbo jets full of people dropping out of the sky every day—that is how many Americans alone are killed by iatrogenic events. And many say this is still a conservative figure! The next time someone dares to suggest that alternative medicine might be harmful, show them how harmful mainstream medicine is and ask them to compare and contrast the choices.

While we are on health issues, we have another article on a subject that most "alternative health publishers" still refuse to cover, and that is that soy products are causing major health problems for more and more people. One of these problems is that increasing numbers of people, children included, are becoming dangerously and suddenly allergic to soy proteins (which are found in most processed foods these days). This is just another nail in the coffin for modern soy products.

Next, we have an article that will upset many vegetarians but will delight anyone who wants to believe in the fact that plants have consciousness and feelings. The article on Primary Perception goes much further than plants. Here we have Cleve Backster, the world's foremost expert and inventor of the polygraph (lie detector), who went on to discover (by accident) that plants respond to human thoughts and feelings. The article is so amazing and has so many implications that I could fill a book of editorials with my excitement over it! Just be sure to read the article, and then get his new book (see the review this issue). Life will never be the same again for you!

And speaking of life never being same again for you, what will you make of the Henocho Prophecies article, I wonder? Last year I had cause to re-investigate some of the material from famous Swiss ET contactee Billy Meier, and I emerged with a sense of amazement at the ongoing events surrounding him. The predictions given to Meier that have come true are extraordinary, to say the least, mainly because they *have* come true, often on the date given. In the article, you will see a list of predictions, and the subsequent verification of events and information. In light of this, how seriously should we take the so-called Henocho Prophecies given to Meier? Once again, we read a series of prophecies where it is said to us that "Unless you human beings change your course, these are the events you are steering towards..." The Henocho Prophecies are shocking, depressing and challenging, and I publish them in the hope that enough people become aware of these possible futures and will thus avoid them.

And just because I haven't mentioned the Science News article on Global Scaling Theory till now, doesn't mean it is not important, and ditto for Twilight Zone. Remember, everything I select for publication has something in it that I believe is a piece of the big jigsaw puzzle of life.

So if you are interested in the meaning of life, once again I extend an invitation to come to our amazing three-day, two-evening NEXUS Conference in Brisbane on 24–26 September (just before *Toutatis* swishes by!). I would love to meet as many of you as possible there.

Duncan

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Letters to the Editor ...

Chemtrails and Conspiracies

Interesting to read about the chemtrail issue, as I have some info you may or may not be aware of.

Years ago, whilst serving in the Royal Australian Air Force, I was attached to No. 1 ARDU at Laverton, Victoria, which by the way is now only grass, disused buildings (above ground, anyway), and an old disused runway. ARDU stands for Aircraft Research and Development Unit, and I happened to be working alongside American pilots and airmen who were here with the U2 spyplane project.

Spyplanes, my arse! They sure were taking pictures, but not just of the enemy but of *our* landscape and weather patterns, and whilst performing this function they were also spraying barium into the stratus clouds along with aluminium oxide dust—for experimental sun-screen effect, we were told. Yeah, right!

One of the other functions I had was to be a supervisor at the Airmen's Club after hours, which brought me into social contact with some of these airmen and their officers, who rather took a liking to our women enlistees not to mention our wives and girlfriends, but the thing they really took a liking to was our Aussie beer! So, being an inquisitive type, yours truly always managed to get "extra duties" so as to be around these people, as they used to shoot off their mouths more than Aussies did, especially after more Aussie beer.

I recollect being informed by an officer and at least two airmen, then serving with the U2 contingent (and who had also befriended my wife and me), that I should move to north Queensland as soon as possible so as not to be affected by the coming sprays in the next few years—sprays to deliberately heat up our atmosphere to aid with drought-producing climate change over central and eastern Australia and parts beyond—and our government of the day knew all about it!

"Why north Queensland?" I asked them, and the reply was that there were more American military

personnel living there after retirement than anywhere else on the planet, due to the humidity and also the proximity to a safe underground facility!

My wife had pretty bad asthma at the time, so I decided not to sign on for another term at the end of my enlistment after also learning about the "other substances" being used to test Australians' immune systems, which were then and are now still being deliberately sprayed into the air above us—for our "benefit", of course!

So, way back in the late 1960s/early 1970s, I knew about the coming privatisation of our councils, resources, utilities and banks long before it was made public and also about what the powers-that-be had in store for us, but nobody believed what I was saying at union rallies and such.

If you think that looks bad, it gets worse, and so does the other info I have kept silent about for years due to the non-disclosure clause I was forced to sign on my discharge papers.

I can say this, though. If Dr Len Horowitz had published his books 30 years ago, more people in this country would have had a greater perspective on what was happening to their countryside, and possibly more would have done something about it—who knows—and maybe, just maybe, we, instead of the military-medical-pharmaceutical cartels, would still own our own country.

I would like to write a book about all this, or even a movie, but am only a pensioner and cannot afford such luxuries, so I'll continue to do my little bit educating people about their immune system and their blood, and how to beat the coming plagues. And believe me when I say they've got some beauties on the way—even bigger than SARS!

Name withheld, Australia

AIDS Nutritional Treatment

Dear Editor: I thought you might be interested in what has happened recently with the nutritional treatment for AIDS.

Since we were last in contact, there have been two small trials

completed with HELP. One was conducted in South Africa at an AIDS hospice, in which five out of six patients recovered. The one problem patient had serious diarrhoea and couldn't absorb much.

The other trial was in Kenya with three people who were very weak and passing into AIDS. They are now all much better. None of these nine patients had ever taken any antiretroviral drugs.

It seems as if some AIDS patients develop serious diarrhoea and, with it, secondary nutritional deficiencies that in themselves can prove fatal.

What these patients appear to need is a very good multivitamin/mineral supplement and balanced diet to correct these secondary deficiencies. Naturally, they should still receive the four key nutrients: selenium, cysteine, tryptophan and glutamine.

There can be little doubt that AIDS is a nutritional disease caused by a virus. Getting the establishment to believe this is another matter.

What is needed now is the support for a large (100-patient) scientific study that cannot be ignored so easily. This is easy to say, but difficult to fund. I have two possible locations for it.

Regards,

Harry Foster, Canada,
<http://www.hdfoster.com>

[See Dr Harold D. Foster's two-part article, "AIDS: The Selenoenzyme Solution" in NEXUS 11/01–2. Ed.]

Excitement over SuperLight

Hi again, Duncan: Great article by John V. Milewski in NEXUS 11/03 about Superlight and *ch'i*, *ki* and *orgone*, which have been known for millennia but are only just beginning to come to the attention of modern physicists via the field of quantum physics.

While SETI continues to waste time and funds on attempting to contact interstellar life using standard radio waves, others like John are exploring the real medium by which mankind will one day open communication with the rest of the universe. Not only that, but they are exploring the very force which

I believe helps to bind our universe together and which enables us to keep these dense physical bodies of ours alive. I have always believed this force to enter our dimension via stars like our sun, but the idea that it may also emanate from black holes makes these awesome phenomena a lot more interesting.

I began to utilise this wonderful force for healing purposes several years ago to remarkable effect—which really amazed sceptical me—but the thought of one day having access to instruments which precisely channel superlight frequencies in a very practical way is truly exciting! I hope that day comes real soon.

Thanks again for your wonderful magazine, Duncan. Keep up the good work.

Regards,

Dave Dennis, davedenoz@optusnet.com.au

Hidden D-Day History

Dear Duncan: As the sixtieth anniversary of D-Day approaches, we ask your readers to spare a thought for genuine war veterans who choose not to belong to veterans' associations; their voice is seldom, if ever, heard.

My father survived the entire siege of Malta, on small arms, air and coastal defence, where he suffered malnutrition in one of the most heavily bombed areas of World War Two.

Later he was amongst the initial infantry assaults to invade Sicily, Italy and Normandy (on D-Day—Gold Beach). Each invasion was followed by ferocious inland battles. He was awarded an impressive array of medals that he has never worn.

After World War Two, ex-servicemen who'd experienced continuous front-line action for the full six years generally wanted nothing more to do with militarism. Joining veterans' associations would have been unthinkable.

The mass media's obsession with stereotyping all war veterans as keen regimental patriotic association members discriminates and excludes many ex-service people, similar to my father (now

... more Letters to the Editor

NB: Please keep letters to approx. 150 to 250 words in length. Ed.

aged eighty-five), who have no interest in being part of a group or becoming regimental exhibitionists.

Due to this narrow view, I believe a lot of real issues are overshadowed, such as how the children of veterans who suffered severe shell-shock appear to be affected. It is as relevant today, with the Iraq war, as with World War Two. Studies have been conducted in The Netherlands and Australia regarding this subject.

There is also a fair amount of evidence, from survivors such as my father, that unfit men were deliberately kept in the front line to hasten their demise to enable the government to save on post-war welfare costs. Sadly, these issues remain hidden in UK history, but less so overseas.

Please check our website on <http://www.warveteran.co.uk> for further details.

Keep up the good work.

Chris Powis, PO Box 147, Waltham Cross, Hertfordshire, EN7 6HA, UK

Mysteries under Giza Plateau

FYI NEXUS: I picked up a newsstand copy of NEXUS on 5/5/04, specifically for the "Ancient Cities Under the Sands of Giza" article [11/03]. Two weeks passed.

Fortuitously, on 15 May 2004, Supreme Council of Egyptian Antiquities Secretary-General Zahi Hawass himself came to town! Synchronistically, Hawass availed himself for me to inquire directly about Tony Bushby's claim.

No respectable archaeocryptologist would take Bushby's evidence at face value, would he? Bushby's case is impressive, but most credibly verifiable is evidence attributed to Zahi Hawass's predecessor, Dr Selim Hassan. So, I went right down, tactfully asking Zahi face to face about it.

Standing last in Zahi's book-signing queue (one of his new books, by the way, has three references to Selim Hassan), I leaned over the table and said, "Dr Hawass, I wish to inquire about a specific detail from researches of Dr Selim Hassan".

Aggressively interrupting, he advised I read a chapter in his previous book devoted to Dr Hassan.

Persisting, I asked, "What do you know of Dr Hassan's report in *Excavations at Giza*? He discovered an underground system of colonnaded tunnels connecting a complex of facilities from Giza to Cairo. This was reported in English newspapers." I had his attention then.

With a poker-faced look of blank credulity, Hawass replied, "I don't know anything about these reports. Send me an email!"

Out of character (re challenges from revisionist adversaries), Zahi did not disparage or angrily deny discoveries attributed to Dr Hassan. Given that Hawass had just shown numerous slides of himself personally descending ancient shafts all over Egypt, reaching as far down as 300 feet, I must concur that Bushby's research does beg the question re both Zahi's actual knowledge and his authority for "preserving and protecting Egypt's ancient past".

But, protecting it from whom or what—revisionist apocalypse?

Sincerely,

R. A. Koppang, Los Angeles, California, USA

Our Common Law Rights

Dear Duncan: Thanks for the article on common law and how it can empower us in these times of loss of rights from the global government cabal.

As a member of UPMART with alternative registration plates, we in New South Wales are now taking the RTA to court to have our system made legal as in Victoria. This involves meetings amongst members supporting each other in dealing with police, writing legal notices and holding practice court sessions, and also supporting the national movement in different referendums on GST, petrol, legal representation, food irradiation, etc. We are also making UPMART.org more shareable to members, as in database and chat rooms, etc.

We have just found the full Quick and Garraun *Annotated Australian Constitution* (1170 pages) at the webpage

<http://setis.library.usyd.edu.au/ozlit/pdf/fed0014.pdf>—a real find, saving us \$370 each and being reproduceable and easily searched.

So when people ask "How much is it to join UPMART?", I say "Whatever it takes to change the present system".

Although many join just for the savings on rego, driver's licence, tolls, GST, etc., there are plenty who are ready to go to court to fight for their rights. At the very least, members learn their common law and constitutional rights.

In solidarity,

Sully/Noah, NSW, Australia, noah49@mail.com

Flu Vaccine Dangers

Dear Sir or Madam: The pharmaceutical companies have now manufactured a contagious disease.

As a self-employed health practitioner, I have read your articles on the pharmaceutical and "illth" industry with great interest.

Chiropractors and other alternative health practitioners are well aware of the pressure brought to bear on society to reject us.

Before the turn of this new century, each winter there were perhaps a half a dozen different patients who tested positive to influenza.

During the winters of 2001 and 2002, very few patients reacted positive to the influenza test, even though they had positive symptoms. About five patients reacted positive to the influenza vaccination test—patients who had received this vaccination as required by their employer, e.g., nurses, or perhaps at the persuasion of their physician, particularly if they were an "older person".

During the same period, about 25 patients reacted positive to the "flu vaccination" who had *not been vaccinated*. These patients had been in contact with someone else who had been vaccinated only days before.

This was my clinical observation as I retired in April 2003; I have not any further clinical observations to further this theory.

Perhaps one of your reporters can find more information on what are only my clinical observations.

It would be rejected by orthodox medicine (the drug pushers).

Regards,

John E. Longbottom, DC (Retired), Australia, longbottom@adam.com.au

[Dear John: I have an item in *Global News* which may shed more light on the subject. Ed.]

Instant Wireless Transmission

Dear Editor: In his fascinating articles, Rochus Boerner writes in "Suppressed Discoveries in Physics—Part 2" [11/03]: "It must be understood that if the existence of instantaneous signals were confirmed, this would instantly invalidate relativity..."

It undoubtedly is the result of the absolute silence of the mass media that Boerner does not know that this is exactly what has happened already.

On 27 October 2001, in Bad Tölz (southern Germany) under supervision of several scientists with Dr Hartmut Müller heading the whole show, a telephone communication between Bad Tölz and St Petersburg based on gravitation waves was established. This is tuning in on a standing wave. There was no electrosmog and *no time* involved, and the communication lasted for more than a minute (*Raum&zeit*, no. 114, Nov–Dec 2001).

On 18 December 2003, the same procedure was followed by the TIM research laboratory at Donau University, Krems (Austria), where a communication during 40 minutes was established (16 code bits per second) without the use of a cable or transmitter (*Raum und Zeit*, no. 128, March–April 2004).

Developments are going on apace, and the press stonewalls them. The finding is at least as important as that of Marconi. Perhaps it would be a good idea to take up contact with Dr Müller.

Sincerely yours,

Hans C. Moolenburgh, Haarlem, The Netherlands

[Thanks for the letter, Hans. We are already in the process of contacting Dr Müller about his work. See his article on *Global Scaling Theory* in this issue. Ed.]

MONSANTO HAS A MONOPOLY ON LIFE

Civil society and farmers' organisations worldwide reacted with outrage on 21 May to the 5-4 decision by the Canadian Supreme Court, affirming Monsanto's right to prosecute farmers who are found to have GM crops growing on their land, whether they wanted them or not.

Monsanto Company accused Saskatchewan farmers Percy and Louise Schmeiser of violating the company's patent on genetically modified canola (oilseed rape). Percy and Louise did not want Monsanto's GM canola seeds that invaded their property, and they did not try to benefit from the herbicide-tolerant trait in the GM seed (that is, they didn't spray Roundup weedkiller), but still Monsanto prosecuted them for patent infringement and demanded a portion of their income. The Schmeisers waged a courageous, seven-year battle against Monsanto that went all the way to the Supreme Court.

The Supreme Court's decision effectively nullifies the Court's 2002 decision that higher life-forms, including plants, are not patentable subject matter. According to the 21 May decision, a patent on a gene or cell can be infringed by a farmer's use of a plant or seed into which the patented material has been incorporated.

"Monsanto has won an inflatable patent today. They can now say that their rights



extend to anything its genes get into, whether plant, animal or human," said Pat Mooney, Executive Director of ETC Group, one of the interveners in the case.

The Canadian Court goes even further than notoriously monopoly-friendly US patent law because it finds that a gene patent extends to any higher organism that contains the patented gene. "Under this ruling, spreading GM pollution appears to be recognized as a viable corporate ownership strategy," said Mooney.

Monsanto's GM seed technology accounted for over 90% of the global area planted with GM seeds last year. The Court's ruling means that if a farmer is in

possession of seeds or plants containing a patented gene, the burden is on the farmer to prove that s/he is not infringing the company's monopoly patent.

"In Monsanto's world, we're all criminals unless a court rules otherwise," observes Silvia Ribeiro of ETC Group's Mexico office. "This will come as shocking news to indigenous farmers in Mexico, whose maize fields have been contaminated with DNA from genetically modified plants, and to farmers everywhere who are fighting to prevent genetically modified organisms from trespassing in their fields," said Ribeiro.

Monsanto's newspaper ads in Chiapas, Mexico, are already warning peasants that if they are found using GM seed illegally, they risk fines and even prison.

"No doubt Monsanto will say this is a victory for their stockholders, but its victory will be shortlived," said Pat Mooney. "This ruling will unite farmers and others opposed to corporate control of food and life, and galvanize civil society to take the issue out of the courts and back to politicians," said Mooney.

(Source: ETC Group news release, 21 May 2004, <http://www.etcgroup.org>)

NEW STUN WEAPONS TO TARGET CROWDS

Weapons that can incapacitate crowds of people by sweeping a lightning-like beam of electricity across them are being readied for sale to military and police forces in the USA and Europe.

At present, commercial stun guns target one person at a time, work only at close quarters and have no effect on vehicles. The new breed of non-lethal weapons can be used on many people at once and operate over far greater distances.

But the advent of wireless stun weapons has horrified human rights groups, who are appalled by the fact that no independent safety tests have been carried out, and concerned by their potential for indiscriminate use. Robin Coupland of the Red Cross says they risk becoming a new instrument of torture, and Brian Wood of Amnesty International says the long-range stun guns could "inflict pain and other suffering on innocent bystanders".

(Source: New Scientist, 19 June 2004)



... GLOBAL NEWS ...

INDIA'S GLOBAL TAKEOVER

A quiet metamorphosis is taking place in Asia as Indian companies buy up their rivals abroad. Last year, Indian firms took over more than 75 international companies. It started with acquisitions in the information technology and related services sector, but now it has spread far and wide to cover other industries.

In pharmaceuticals, Wockhardt has bought CP Pharma of the United Kingdom for \$10.85 million. Tata Tea, part of the Tata Group, India's oldest industrial conglomerate, has taken over Tetley of the UK, the world's biggest teabag maker, for US\$430 million—becoming the world's second-largest tea company in the process.

Among the most publicised deals, Tata Motors bought South Korean company Daewoo's truck plant in that country. Reliance Infocomm, belonging to India's largest privately held business house, Reliance Group, took over Flag International, a major telecom network.

A recent report by Goldman Sachs, for example, predicts that India will be the third-biggest economy by 2050—just behind China and the US, in that order.

In the UK alone, Indian firms have about 440 investments/joint ventures, with India being the eighth-largest investor. Last year, the top 92 Indian-American-owned companies in the US generated business of \$2.2 billion and provided full-time employment to about 19,000 in 2002. There are 1,441 Indian companies operating in Singapore; of these, more than 450 are technology enterprises.

(Source: Asia Times Online, 22 June 2004, http://atimes.com/atimes/South_Asia/FF22Df04.html)

TV SCREEN LIGHT DEPRESSES SLEEP HORMONE IN CHILDREN

Exposure to television can influence melatonin levels in children and possibly contribute to the premature onset of puberty, according to a study by scientists from the University of Florence in Italy.

The study found a 30% increase in levels of the sleep-regulating hormone in children who had abstained from watching television for a week.

The findings are based on a study of 74 children from the Tuscan town of Cavriglia who volunteered to forego television, video games and computers for a week last month [May] in the interests of science. Aged between six and 12, the children normally watched an average of

three hours' television a day. Urine samples taken at the beginning and end of the experiment showed a significant rise in melatonin levels, particularly among the younger children, by the end of the television-less week. As well as blacking out the video screens, parents were asked to reduce the intensity of artificial lighting in their homes during the experiment.

Melatonin is a hormone produced by the pineal gland, a pea-sized organ just above the middle of the brain. Exposure to light during the day inhibits its production, which normally begins around 9 pm, with rising levels of melatonin in the blood making people feel sleepy.

Scientists are less certain about the role of the hormone in regulating the onset of puberty, an issue the Florence researchers intend to pursue. In Western societies, the arrival of puberty has advanced by about a year since the 1950s, when television became common.

It is the light from the TV set that is the supposed problem. Extra exposure to light lowers production of melatonin, says Roberti Salti of the University of Florence. (Sources: Independent, 27 June 2004; New Scientist, vol. 183, issue 2454, 3 July 2004)

VERNESHOT HYPOTHESIS MAY EXPLAIN IMPACT CRATERS

The argument over what killed the dinosaurs has raged for 25 years and polarised into two opposing camps: those who support a meteorite impact; and those who favour a prolonged bout of mega-volcanism—a "continental flood basalt".

But now a team from Geomar, an earth sciences institute at Kiel University in Germany, has come up with a completely new type of geological catastrophe to explain the death of the dinosaurs as well as three previous mass extinctions. If they are right, the culprit was neither a meteorite nor a flood basalt, but a colossal underground explosion called a Verneshot (named in honour of Jules Verne).

The Verneshot hypothesis attempts to explain a mystery that haunts the debate over why mass extinctions always seem to coincide with both continental flood basalts and meteorite impacts, when the odds of these happening simultaneously are vanishingly slim.

In the past 400 million years, there have been four major mass extinctions. Between 380 and 364 million years ago, the Frasnian–Famennian extinction pulses wiped out 60% of marine life. That was followed by the biggest extinction of all, when 96% of the world's species disappeared at the end of the Permian, 251 million years ago. There was another huge die-off at the end of the Triassic, 201 million years ago. And finally, 66 million years ago, the dinosaurs and numerous other groups met their end at the Cretaceous–Tertiary (K–T) boundary.

Each of these events is associated with both a meteorite impact and a continental flood basalt. Yet even one such double whammy is highly unlikely, so could it really have happened *four times*? Meteorite impacts large enough to trigger a mass extinction are believed to occur less



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than once every 100 million years. Continental flood basalts, meanwhile, happen roughly once every 30 to 50 million years and last for about a million years.

Geomar team leader Jason Phipps Morgan said that "the odds of a meteorite impact occurring at the same time as a continental flood basalt within the last 400 million years is around one in eight". But the probability of *four* of these coincidences happening within the last 400 million years is one in 3,500.

A Verneshot event could trigger a magnitude 11 earthquake and eject as much as 20 gigatonnes of rock into a "super-stratospheric" trajectory before crashing back to earth, in some cases causing impact craters.

(Source: New Scientist, 8 May 2004)

DNA STUDY SHOWS HUMANS AND CHIMPS NOT SO SIMILAR

Humans and their closest relatives, chimpanzees, may be more different than geneticists have realised. A comparison of the chimpanzee's chromosome 22 with its human counterpart, chromosome 21, shows that just 1.44% of the chromosome's 33.3 million DNA bases are different. The study also revealed nearly 68,000 insertions or deletions of DNA, most of which were only a few bases long.

But because each gene contains hundreds or thousands of bases, even these differences are enough to alter more than 80% of the proteins produced by those genes, says the International Chimpanzee Chromosome 22 Consortium (*Nature* 429:382).

(Source: New Scientist, 29 May 2004)

MEDICAL IMPLANTS POWERED BY BODY HEAT

A company in New York state is planning to provide patients with an implantable power source that recharges the battery of their medical implant (i.e., pacemakers, defibrillators) using electricity generated by the patient's own body heat.

By continuously recharging the batteries, it saves the patient from frequent surgery. In some low power devices, it could even replace the batteries altogether, making such operations unnecessary.

The "biothermal battery", under development by Biophan Technologies of West Henrietta, will generate electricity using arrays of thousands of thermoelectric generators built into an implantable chip. These generators exploit the well-known thermocouple effect, in which a small voltage is generated when two of the junctions between two dissimilar materials are kept at different temperatures.

Today's pacemaker batteries last more than a decade before they need replacing. Biophan says the device it is aiming for will be able to extend this to three decades by continuously trickle-charging pacemaker batteries. It might even be able to power some low-power pacemakers directly.

(Source: New Scientist, 12 June 2004)

CONTAGIOUS FLU VACCINES?

The dangers of vaccinating against flu if the vaccine is not a perfect match for the disease strain have been highlighted by a horse study.

Andrew Park's team at the Animal Health Trust near Newmarket, UK, tested

vaccines that were either identical or slightly different to a strain of flu infecting ponies. The ponies given mismatched vaccine were more likely to become infected and to excrete live flu virus, and also stayed infectious longer than ponies with a well-matched vaccine.

"The longer infectious period allows the virus more replication cycles and a greater chance to evolve," says co-author James Wood. And when the researchers put their results into an epidemic model, they found the risk of large outbreaks after using a mismatched vaccine to be up to 1,000 times higher than after a well-matched vaccination (*Proceedings of the Royal Society B*, DOI: 10.1098/rspb.2004.2766).

This kind of flawed vaccination may have allowed flu mutants to evolve in vaccinated poultry in Mexico (*New Scientist*, 27 March 2004). The work also raises further concerns about widespread poultry vaccination in China. A virulent new bird flu devastated birds across East Asia this year and also killed 22 people.

(Source: New Scientist, 19 June 2004)

BACTERIAL INTEGRATED CIRCUITS CAN SENSE TOXINS

Using silicon chips to collect signals from specially altered bacteria, NASA-supported researchers at the University of Tennessee have created a device that can detect almost anything. Microbiologist Gary Sayler and colleagues have already used these devices, known as BBICs, or Bioluminescent Bioreporter Integrated Circuits, to track pollution.

NASA is interested in sensing contaminants because spaceships are tightly sealed. Unseen fumes from scientific experiments or toxins produced by moulds and other biofilms can accumulate and pose a hazard to astronauts. BBICs can be crafted to sense almost anything: ammonia, cadmium, chromate, cobalt, copper, lead, mercury, PCBs, proteins, ultrasound, ultraviolet radiation, zinc—the list goes on and on.

Microbes thrive in a wide range of environments, so it's possible to design BBICs that can survive in extreme or highly contaminated surroundings. "They can actually do their job sitting in things such as jet fuel/water mixtures," marvels Sayler.

BBICs are useful on Earth, too. They can detect formaldehyde emitted by pressed wood furniture and moulds often implicated in sick building syndrome.

"If this device works as planned, it could turn out to be a very inexpensive kind of



"The future isn't what it used to be."

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monitoring system," says Saylor.

Advanced BBICs could serve as bioterrorism monitors, as a means to detect DNA radiation damage in astronauts, or as a diagnostic tool for doctors.

(Source: NASA Headlines, 10 June 2004, http://science.nasa.gov/headlines/y2004/10jun_bbics.htm)

A CLOSE CALL WITH ASTEROID TOUTATIS IN SEPTEMBER 2004?

On 29 September, a three-mile-long asteroid will make the closest predicted approach of any asteroid or comet to visit Earth in the next 30 years, say scientists at NASA's Jet Propulsion Laboratory Near-Earth Orbiting Programme Office. They predict the asteroid will come within 963,000 miles of Earth—a very near miss.

Asteroid 4179 *Toutatis* was named after a Celtic/Gallic god, and is one of the largest known Potentially Hazardous Asteroids (PHAs) that approaches our planet on a Near Earth Orbit (NEO).

Close encounters with Venus, Earth, Mars and Jupiter constantly alter the shape of the asteroid's path as it loops through the solar system every 3.98 years. On 31 October 2000, the asteroid passed less than 29 lunar distances from Earth. The 29 September 2004 fly-past will come within four lunar distances of the Earth.

Toutatis also has one of the strangest rotations yet observed in the solar system. Instead of spinning about a single axis, as do the planets and the vast majority of asteroids, it "tumbles" somewhat like a rugby football when it bounces.

At three miles long, it would present a terrible danger if it were to collide with the Earth, although scientists at NASA say this is unlikely. It is travelling at a speed of about 20 miles per second, and if it struck an ocean it would unleash a "mega tsunami" or giant tidal wave that could reach around the entire globe, inundating millions of hectares of land, destroying coastal habitations and killing perhaps millions of people.

If it hit land, it could annihilate an area the size of Europe and raise enough dust into the atmosphere to change the climate of the planet, causing a mini ice age that would freeze crops, destroy plant life and pre-empt a global famine.

An orbit simulation of the close approach of *Toutatis* is at <http://neo.jpl.nasa.gov/cgi-bin/db?name=4179>.

(Source: Ian Gurney, 5 February 2004)

FROM BODY CLOCKS TO CHRONOTHERAPEUTICS

Chronobiology, as the study of body clocks is known, has already produced some curiosities. If you want to bet on when you might give birth naturally, go for between 4 am and 6 am. If you have osteoarthritis, it will hit you worst in the early evening. Your risk of an asthma attack is 300 times higher between 2 am and 6 am. Each disease, it seems, strikes hardest at a time of its own choosing.

It took decades of investigation for scientists to tease out the location of the body's master clock. Eventually, in mammals at least, it was narrowed down to a clump of just 20,000 cells in a part of the brain called the suprachiasmatic nuclei (SCN), a part of the hypothalamus at the base of the brain. Within the cells, scientists found a series of genes that switched on, off and back on again over a 24-hour period. This cycle has two knock-on effects: firstly, to send electrical pulses into the nervous system; and secondly, to produce squirts of hormones. Both spread through the body like the chime of a clock.

Scientists have since discovered that while the SCN beats out a standard time for the body, each of our organs uses the signal to set its own individual clock, much as countries set their time by GMT. Many organs, such as the liver and kidneys, are typically on New York time—five hours behind our master body clock.

Many working at the forefront of chronobiology believe that medicine has missed a trick by failing to take time variations into account. "Look at how we educate doctors and scientists. They're taught that the body is in a constant state over 24 hours, not that you get these cycles," says Michael Smolensky, an expert in body clocks at the University of Texas at Houston.

The upshot is that many in the medical profession, though aware that physiology changes with time, do not appreciate the implications.

Many experts in the field are convinced that if doctors and pharmaceutical companies appreciated how diseases vary with time, they could significantly improve their treatments. Studies have already shown that, in the case of certain diseases, taking drugs at different times has a marked influence on how effective they are.

The revelation that drugs work better at certain times has raised deep concerns among some in the scientific community who believe that it undermines how common chemical tests are performed.

Before a drug gets anywhere near a human, it is tested on animals, usually rodents. And your typical lab mouse is nocturnal. "It means we've been testing chemicals, and not just drugs, on animals whose physiology is 12 hours out of synch with our own," says Foster. "Does this mean we need to redo all of our toxicity testing? It's not out of the question."

Foster believes that the pharmaceutical industry could benefit from investigating how time affects the workings of its drugs. Doing so could not only reveal the best time to take a drug, but also when *not* to take it. "Say you test a new anticancer drug and it causes appalling side-effects and kills lots of animals. You decide you can't use that drug, and move on to another one," Foster says. "But if that drug had been tested at another time, say 12 hours later, it may have caused very few side-effects. So it could well be the case that not only are we giving drugs that cause more damage than necessary, but we are missing out on other very valuable drugs because they are nasty at the time they are tested."

Despite emphasising the shortcomings, though, Redfern doesn't rule out chronotherapeutics. "There may well be conditions like cancer, asthma, cardiovascular disease and epilepsy where this is worth looking at," he says.

"It's not like 10 years ago, when this was considered a bit off-the-wall. It's taken a lot more seriously now. We know it isn't fantasy."

Further reading

- *Rhythms of Life*, by Russell Foster and Leon Kreitzman, Profile Books, 2004, ISBN 1861972350
- *Chronotherapeutics*, by Peter Redfern, Pharmaceutical Press, 2003, ISBN 0853694885
- *The Body Clock Guide to Better Health*, by Michael Smolensky and Lynne Lamberg, Owl Books, 2001, ISBN 0805056629
- *Chronobiology*, by Jay C. Dunlap et al., Sinauer Associates, 2003, ISBN 087893149X

(Source: by Ian Sample, The Guardian, UK, 1 July 2004)

PEAK OIL REVISITED: THE BILL COLLECTOR CALLS

As major oilfields continue to decline in productivity, as new infrastructure is too expensive to build and as global oil reserves cannot meet demand, we are on the brink of a worldwide economic and social crisis.

by Michael C. Ruppert

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The one thing that every Middle Eastern leader, manager and planner who dreams of holding his country together fears now is that there will be a widespread uprising inspired by the perceived victory against Spain after [the bombing in] Madrid and Spain's withdrawal from Iraq, that it might prompt much of the Muslim world to start attacking oil facilities everywhere. This is the way they see that has worked, to defeat the West and to avenge their grievances. May God help us all if that happens. Stability must come to Iraq. But how?

— Anonymous Middle Eastern participant at the Third Conference of the Association for the Study of Peak Oil and Gas, Berlin, Germany, May 2004

June 21, 2004, Berlin and Los Angeles — *From The Wilderness (FTW)* began writing about Peak Oil in the summer of 2002. It was much more difficult then to discuss Peak Oil, what it means or how certain, quick and defiant was to be its arrival. Denial in many minds was so instant and overwhelming that only a trained eye could see its millisecond appearance before encountering the brick wall of a closed mind.

By the spring of 2004, things had changed dramatically. This is both the good news and the bad news. In May 2004, I attended the Third Annual Conference of the Association for the Study of Peak Oil and Gas (ASPO) in Berlin, Germany. Although I have a great many friends in ASPO, I tend to leave these conferences feeling as though I've had a big meal but am still hungry. Governed as they were by scientific protocols, the 2003 and 2004 conferences seemed to occur in vacuums. With the cool professionalism that's proper to scientific discourse, the conferences marshalled excellent resources of data and analysis while remaining eerily detached from political and economic developments in the outside world—detached from 9/11, from violence and intrigue in Iraq, in Saudi Arabia, in West Africa, in Venezuela; detached from bitter conflict and bloodshed, and from economic disintegration.

That disconnect was nowhere near as obvious in Paris in May 2003 as it was in Berlin a year later. From May 24, 2004, as people arrived for the conference, through to the final day on May 26, the hottest conversations were as much about what was going on in the headlines as about what was being discussed inside the room. The two didn't converge nearly enough. Peak Oil, Berlin, was almost twice as large as Paris had been.

Many of the 250-plus attendees arrived on both mornings with papers under their arms containing stories about oil shortages and economic issues connected thereto. They tended to meet outside for drinks or meals, asking: "Have you seen the cover of the June 2004 *National Geographic*? It's Peak Oil!"; "Did you see the *International Herald Tribune* today on global production and supply?"; "Do you think the Saudis really can increase production, or are they bluffing?"; "Did you see where Shell has downgraded its reserves, again!"; "Did you notice that someone finally attacked a Saudi oil facility? Now the Saudis won't have to prove that they can increase production, either to their people or the markets. It's the perfect excuse."

This had been no overnight development. For almost the entire year between the Paris and Berlin conferences, the icons of the mainstream press—the ones known and employed to mould public and business perception—had been acknowledging Peak Oil's reality, sometimes reluctantly, sometimes less than directly, but also sometimes very boldly. CNN, the BBC, the *New York Times*, the *Economist*—dozens of media giants had begun to respond, like a giant ship turning slowly in the water. The ship had clearly changed course, but was it enough? Was it in time?

In Berlin: Show versus Substance

Present in Berlin for the ASPO conference on May 25 and 26 were some newcomers, senior representatives from British Petroleum, ExxonMobil and the International Energy Agency (IEA). They came as nobles called to a commoners' court: polite, courteous, but waving their flags just the same, unperturbed by the growing mess around them. If nothing else, their presence served as a reminder that Peak Oil was squarely on the table. Even from their denials came startling revelations.

As the press reports describing a disintegrating world outside rolled on, the debate inside still seemed removed from it all. It felt strange to discuss Peak Oil in a purely data-driven way, while knowing how utterly it will shatter our growth-driven industrial civilisation.

The big three of ASPO—Colin Campbell, Kjell Aleklett and Jean Laherrère—accompanied by the *de facto* star of the event, investment banker Matthew Simmons, had their work cut out for them; not with the audience but with those who had come to deny.

Natural gas issues facing Europe took up most of the first day. Two things quickly became clear on that account. Firstly, almost all of Europe, soon even perhaps Ireland, is going to become dependent upon Russian natural gas to stay warm (Britain has just become a net gas importer in the face of North Sea decline). Secondly, Russia has much less natural gas than the economists and bookkeepers have predicted.

Simmons asked rhetorically why anyone would stake their future on four large Russian fields that have been shown to be in permanent decline. It was a good question, especially in light of the fact that Laherrère, with his renowned calculations, concluded that natural gas demand in Europe would grow at 6.4% per year, that the global natural gas cliff would hit by approximately 2030, and that by 2050 there would be zero reserves left. He calmly announced that, as far as Russian gas reserves are concerned, there is a 50% difference between the technical data on Russian gas and what he called the "political" data. Simmons pointed out that North America hit its natural gas peak in 1973 and is now falling off the production cliff.

Presentations exploring liquefied natural gas (LNG) imports to the USA concluded what FTW already knew: the cost is too expensive, the lead-time too long, and the capital investment too great to make much of a difference here.

Everybody, even the giant German power companies like RWE, talked about coal. Nuclear, at least for some, was also an option but there were no other viable near-term solutions presented. Token representatives of hydrogen and alternative energies made presentations—but for those who had looked at hard numbers, these were more show than substance.

Saudi Arabia: The Hot Topic

Saudi Arabia's promise to increase production to meet US and world economic needs was the hot topic. Much discussion and hard data were devoted to the fact that Ghawar—the largest field in the world—is, along with all of Saudi Arabia's other large fields, old and tired. In recent years, both water injection and so-called "bottle-brush" drilling have been employed to maintain production, and both of these techniques tend to accelerate decline and damage the reservoirs. They are desperate measures.

With bottle-brush drilling, when the water table hits the horizontal shaft, often without warning, the whole field is virtually dead and production immediately drops off to almost nothing. As several at the conference noted, this is exactly what has already happened in Oman, Syria and Yemen.

As William Kennedy, a UK observer at the conference, noted afterwards: "For the record, Ghawar's ultimate recoverable reserves in 1975 were estimated at 60 billion barrels—by ExxonMobil, Texaco and Chevron. It had produced 55 billion barrels up to the end of 2003 and is still producing at 1.8 billion per annum. That shows you how close it might be to the end. When Ghawar dies, the world is officially in decline."

No one, not even from the major oil companies or the economic camp, rose to defend Saudi Arabia's claim that it could increase production rapidly.

The BBC's Adam Porter ("Is The World's Oil Running Out Fast?", BBC News, June 7, 2004) nailed the IEA's Chief Economist, Faith Birol, over his confident assertion that there is still plenty of oil:

"In public, Mr Birol denied that supply would not be able to meet rising demand, especially from the buoyant economies in the USA, China and India.

"But after his speech, he seemed to change his tune.

"For the time being, there is no spare capacity. But we expect demand to increase by the fourth quarter [of the year] by 3 million barrels a day.'

"He pinned his hopes for an increase in production squarely on troubled Saudi Arabia.

"If Saudi does not increase supply by three million barrels a day by the end of the year, we will face...how can I say this...it will be very difficult. We will have difficult times. They must invest.'

"But even Mr Birol admitted that Saudi production was 'about flat'. Three million extra barrels a day

would mean a huge 30% leap in output in just a few months.

"When BBC News Online followed up by asking if this giant increase in production was actually possible rather than simply a desire, he refused to answer. 'You are from the press? This is not for you. This is not for the press.'"

Mistakes of the Energy Industry

In his presentation, Matthew Simmons, CEO of Simmons and Co. International, the world's largest investment bank, reeled off a litany of "mistakes" made by the energy industry over decades. He described some of these mistakes as: demand was never understood properly; supply was merely aspiration (not actual reality); decline curves became waterfalls; we didn't have enough rigs (infrastructure); there was little fuel substitution; there were few technology gains.

Simmons described these mistakes as cascading and compounding over time, and suggested that the underlying cause of all of them was the inherent assumption pushed by the financial markets that growth could possibly be infinite—when nothing else in the physical universe is; when no organism or species has ever avoided the cycle of growth, maturity and decline that governs the natural world.

Colin Campbell, the "godfather" of the Peak Oil movement, with a bit of pique divided the conference presenters into three camps:

"If Saudi does not increase supply by three million barrels a day by the end of the year, we will face...how can I say this...it will be very difficult. We will have difficult times."

the Surveyors, who report hard data and not abstract modelling; the Economists, who deny reality and assert that money produces energy and not the other way around; and the Pretenders, "who know full-well what the situation is but pretend otherwise for short-term political objectives". In the last camp he places Faith Birol of the IEA, supposedly the world's energy watchdog.

Even Birol made his own startling revelations on the second day when he confirmed that another new trend, new since Paris, had become dominant. Many presenters from German and European industry began listing a new priority for future energy planning that I had not heard before. They all emphasised "energy security" as the top concern, or one of their most important concerns, for the future. I checked my notes from Paris; I hadn't recorded its being mentioned once. That sounded military to me, at least in terms of building geostrategic alliances which always have military options included. When confronted directly on that point, the presenters retreated to assertions that what they really want are treaties and economic agreements. "Well," I thought, "what enforces those things?"

Birol also hit hard on this point. Then he engaged in a kind of irrational presentation in which he put forth four points. The first two were telling. Firstly, he said the IEA is absolutely certain that there is enough energy to guarantee economic growth until 2025. In his next point, he said that (in light of Shell's downward revisions and pending revisions from other major oil companies) there is sufficient uncertainty about the true nature of stated world reserves that a new "transparent" reserve accounting system should be established to provide the needed trust for the financial markets. In other words, his first point is meaningless.

Colin Campbell, seated on the panel with Birol, quipped, "If there were transparency, it would be clear that we are at peak now and everything might fall apart". Again, I thought of the headlines and war and said to myself, "Um, it already is".

British Petroleum and ExxonMobil also stepped through the looking glass. After presenting a series of slides which almost everyone in the audience was quite capable of reading, BP spokesman Francis Harper, addressing the issue of "reserve growth", refused to answer two direct questions about how his charts had just absolutely confirmed an imminent peak and decline. He just didn't answer. He did say that "Reserve estimates are uncertain and can vary widely throughout field life".

Later, ASPO founder Campbell speculated that BP is perhaps the worst book-cooker of all the majors when it comes to reserves, and that there may be some large surprises coming as increasing pressure is put on the majors to produce transparent and verifiable calculations.

ExxonMobil's G. Jeffrey Johnson, while saying that supply is sufficient to satisfy growth until 2020, also admitted that current decline is at 4–6% per year. Economic growth is not possible without increased energy production. When asked by me where ExxonMobil is working feverishly to find new reserves, Johnson rattled off a list of countries and regions already well familiar to

FTW readers: West Africa, Middle East and South America. Not one of those well-explored regions has anything near the two or three Ghawar fields we need to find immediately to avert a crisis.

Assuming sufficient oil were found, how much money would be needed to develop it and bring it to market? ExxonMobil's spokesman indicated that a global *annual* investment of US\$530 billion would be required. The IEA's Faith Birol stated that \$16 trillion would have to be invested before 2030 to develop oil and gas reserves that, even he admitted, no one is sure exist.

Ali Samsam Bakhtiari: A Candid Assessment

Another fixture at ASPO conferences is Ali Samsam Bakhtiari, Vice President of the National Iranian Oil Company (NIOC). A suave and genial Persian on whose tribal land the first oil well in the Middle East was drilled, Bakhtiari was doggedly followed by journalists and documentarians looking for relevant quotations. Frequently in the company of Simmons, he remained available throughout the conference. Bakhtiari is firmly in the camp of the Surveyors, warning about Peak Oil and convinced of its certainty. It was he who, in Paris, dropped the first hints to me and others that Saudi Arabia may have peaked in May 2003. I have come to call him "the Prophet Ali"—a label which makes him quickly blush and wave his hands in embarrassment.

Like others from the region attending the conference, Bakhtiari brought new warnings. He cited the data about sudden and unexpected declines as the result of bottle-brush drilling in the region, and expressed his strong doubts that Saudi Arabia could increase production under *any* circumstances. While a bit more reticent to express his fears about growing instability within the region, he was more candid in his assessment of the global energy picture.

Bakhtiari told the conference: "The crisis is very, very near. World War III has started. It has already affected

every single citizen of the Middle East. Soon it will spill over to affect every single citizen of the world. Syria's oil production is in terminal decline. Yemen is following. Major Middle East producers, including Saudi Arabia, will peak soon or have already peaked."

Off the stage, he was even more direct. "The present war cannot be confined to the Middle East. It will soon spill over to the rest of the world. The final implications will upset the global appcart."

Rimini and Uppsala Protocols: Ethical Management

Colin Campbell has begun the search, from a true expert's viewpoint, for immediate, if admittedly incomplete, solutions. In his final presentation, he submitted a draft of a plan to manage decline ethically. Called the Uppsala Protocol (formerly the Rimini Protocol; see <http://www.peakoil.net>), Campbell's simple proposal approaches Peak Oil from the perspective of humanitarian and egalitarian imperatives rather than market forces. Though simple in concept, the two proposals for future consumption in the Uppsala Protocol may ultimately force

"The crisis is very, very near. World War III has started. It has already affected every single citizen of the Middle East. Soon it will spill over to affect every single citizen of the world."

— Ali Samsam Bakhtiari
Vice President
National Iranian Oil Company

mankind to make a fundamental choice about what its moral "True North" really is.

As the conference ended, Campbell and others debated whether to take the conference to Brussels ("Broadway", as he called it), home of the European Union, in 2005 or go to Portugal. I couldn't help thinking, "What are you waiting for?"

The World Awaits Confirmation

When I got back from the extended trip to Berlin, Cologne and Toronto, it was like all the "real-life" things that weren't mentioned in Berlin had ganged up on me. My in-box was flooded with Peak Oil stories from all over the world. The stories were coming out daily now; they seemed like pellets from a massive shotgun blast which people had not yet realised had been unleashed by only one trigger-pull and only one shooter. It had always been inevitable that, sooner or later, people, politicians and the markets would get it, perhaps all at once. It was the "later" possibility that scared most of us in Berlin.

If one scratched any surface in early June 2004, as the G8 nations gathered in Georgia with energy and the Middle East as their most pressing concerns ("G8 offers opportunity for Bush", CNN, June 7), as gasoline prices continued to rise, as a wave of terror attacks forced foreign technical service workers to flee Saudi Arabia, as Saudi Arabia continued *not* to increase production and as more data streamed in suggesting that it couldn't, one could almost feel panic lurking.

The biggest fear, however, subtly acknowledged by global policy-makers and not-so-successfully masked, is about *energy*. On June 6, Peak Oil arrived in the *Washington Post*. In a story titled "After the Oil Runs Out", James Jordan and James Powell wrote:

"...conventional oil production has already peaked and is declining. For every 10 barrels of conventional oil consumed, only four new barrels are discovered."

"If you're wondering about the direction of gasoline prices over the long term, forget for a moment about OPEC quotas and drilling in the Arctic National Wildlife Refuge and consider instead the matter of Hubbert's Peak. That's not a place, it's a concept developed a half-century ago by a geologist named M. King Hubbert, and it explains a lot about what's going on today at the gas pump. Hubbert argued that at a certain point oil production peaks, and thereafter it steadily declines regardless of demand. In 1956 he predicted that US oil production would peak about 1970 and decline thereafter. Skeptics scoffed, but he was right...

"It now appears that world oil production, about 80 million barrels a day, will soon peak. In fact, conventional oil production has already peaked and is declining. For every 10 barrels of conventional oil consumed, only four new barrels are discovered. Without the unconventional oil from tar sands, liquefied natural gas and other deposits, world production would have peaked several years ago...

"...Lost in the debate are three much bigger issues: the impact of declining oil production on society, the ways to minimize its effects and when we should act. Unfortunately, politicians and policymakers have ignored Hubbert's Peak and have no plans to deal with it. If it's beyond the next election, forget it.

"To appreciate how vital oil is, imagine it suddenly vanished. Virtually all transport—autos, trucks, airplanes, ships and trains—would stop. Without the fertilizers and insecticide made from oil, food output would plunge. Manufacturing output would also

drop. Millions in colder regions would freeze..."

It was a tepid entry from the *Post*, but a start. The story relied on generalities about peak and decline, to the exclusion of all the hard data that have surfaced over the last two years. Simultaneously, it tried to give false comfort without foundation.

Just over a month before, on April 26, the *Moscow Times* had been a bit more direct. "G-7: Oil Price Threatens World Economy" was the headline, and the story minced no words:

"...In a statement released after talks in Washington, the G-7's central bankers and finance ministers singled out energy costs as a risk to global growth. Crude oil prices are up about 37 percent from a year ago and have risen 11 percent to nearly 11-year highs around \$37 per barrel since the officials last met in Florida on Feb. 7.

"It is obvious that rising oil prices can have a negative effect on world GDP growth," said US Treasury Secretary John Snow. German Finance Minister Hans Eichel said the Organization of Petroleum Exporting Countries must 'live up to their responsibility for the global economy'..."

These stories were followed shortly thereafter by more which edged dangerously close to the panic line. And all throughout

May and June, webs of sophistry were spun forth by pundits who misrepresented data with only one real intent: a desperate effort to "protect" the markets. That effort had apparently failed.

Some, like Sterling Burnett in a *Houston Chronicle* Op Ed of May 29, blithely claimed that there is enough oil to last for 500 years. Not even the chief critics of Peak Oil would do that. Others, like Victor Canto of the *National Review* ("Hubbert's Holes", June 4), said it was all a matter of economics; need and price would produce a painless substitution with some new energy source he wasn't quite able to

describe or hadn't fully researched.

Even the shameless George F. Will, writing in the *New York Post* ("America After Oil", June 13), while not fully able to say that Peak Oil isn't real, suggested that everything is a function of price and that throwing money at the problem would soften the blow, while at the same time offering an unfounded morsel of hope for the easily frightened by saying, "But, then, Alaska may have three times more reserves than originally estimated".

George, we've been there. Estimated reserves? Probable reserves? Proven reserves? Ultimately recoverable reserves? The kind of reserves that caused Shell to revise its "booked" reserve figures downwards four times in one year? (Canadian Broadcasting Co., May 24) The kind of reserves that caused the IEA's Chief Economist Faith Birol to state that a deep, new transparency is needed in the reporting if we are to find out how much there really is? The kind of reserves that British Petroleum was forced to defend on June 14 (AP Business Wires), while warning that new calculations might result in downward revisions? The kind of reserves that serve only to define share values and which exist only in the minds of economists, brokers and stockbrokers? The kind of reserves which cannot and will never be pumped into your gas tank, or be used to grow and transport your food, or get you to work? The kind of reserves that prompted *Business Week* to ask on June 21, "Why isn't Big Oil drilling more?", or Steve Raabe of the *Denver Post* to write on June 13, "US Faces Reality Check Over Oil", or Alex Berenson to write in the *New York*

Times on June 12, asking why, for six years, Chevron Texaco's stated oil reserves have risen while their production has steadily fallen? Are we drilling more now and enjoying it less? Where is the money for drilling coming from, as oil companies buy back shares, streamline and build up cash reserves?

Duh! Big Oil isn't drilling more because they know there are no more large finds out there to drill in. More drilling doesn't mean more supply. It means more holes in the ground. This is what people like M. King Hubbert, Kenneth Deffeyes, Richard Duncan, Walter Youngquist, Colin Campbell, Kjell Aleklett, Jean Laherrère, Richard Heinberg, Julian Darley, Matt Simmons and all of our colleagues have been warning about for years.

That is why I have taken such pains over the years to document how the world's economic system is hopelessly corrupt and absolutely incapable of telling the truth. Yet, even so, there are still signs that the thin veneer between outward confidence and fear—between a half-truth which is really a lie and a whole truth which can lead to real solutions—is quickly dissolving. But until *that* Rubicon is crossed, until the deception and denial are overcome, there will be no real solution other than continued war, bloodshed and destructive behaviour which are blocking us from more peaceful, longer term and more humane solutions.

George Bush and Dick Cheney may have meant it when they said that the American way of life is not negotiable. But it most certainly is on life-support and being sustained by cruelty, brute force and lies.

The Markets Just Can't Hide It Anymore

On April 7, J. P. Morgan hosted a two-day private conference call for its analysts and major investors, titled "Peak Oil: Fact or Fiction?" *FTW* secured permission to get veteran investigative journalist Suzan Mazur on the line to listen to that conference, and we reported on it to our subscribers. (I listened, too; see http://www.fromthewilderness.com/free/ww3/042204_mazur_morgan_oil.html.) Although Morgan barely stuck a toe into the water, the mere fact that it had decided the subject was important enough to address was a watershed moment. This, even as Bloomberg and *Forbes* were advising their more sophisticated readership about profit opportunities and likely consequences of Peak Oil's arrival. That, of course, raised the unholy spectre of wild speculation that could cause untold human suffering as a result of price gouging.

It reminded me of the recommendation of Matthew Simmons in Berlin that oil futures and speculation should require a 50% margin requirement for investing in oil derivatives (futures).

Finally, at long last, someone said it all in plain English on June 13, 2004. On that day, the *Seattle Times* published an editorial by Scott Burns titled "Oil and S&P connection points to grim news for stocks". Finally!

Prior to this admission, CBS News MarketWatch issued a bulletin on May 26, saying that US new home sales had fallen sharply in April, and that was followed soon after on May 30 by a bulletin from another source, investment consultant Robert D. McHugh, drawing attention to a sudden and dramatic increase in America's M3, credit-based, money supply (<http://www.safehaven.com/article-1597.htm>):

"...the Federal Reserve has confirmed our Stock Market Crash forecast by raising the Money Supply (M-3) by crisis proportions, up another 46.8 billion this past week. What awful calamity do they see? Something is up. This is unprecedented, unheard-of pre-catastrophe M-3 expansion. M-3 is up an amount that we've never seen before without a crisis—\$155 billion over the past 4 weeks, a \$2.0 trillion annualized pace, a 22.2 percent annualized rate of growth!!! There must be a crisis of historic proportions coming, and the Federal Reserve Bank of the United States is making sure that there is enough liquidity in place to protect our nation's fragile financial system. The amazing thing is, the Fed's actions mean *they know* what is about to happen. They are aware of a terrible, horrific imminent event. What could it be?..."

We have to pay for \$100 (or higher) a barrel of oil somehow. Why don't we just print the money? Anyone who has heard of the damage done by inflation and hyperinflation to those least able to cope with it should think back to Germany's Weimar Republic in the 1920s. Perhaps they should also look ahead to future wars, as the US Navy announced on *Voice of America* News on May 31 that it was deploying a US aircraft carrier battle group to the Gulf of Guinea off the West African coast for a joint exercise with our newfound friends—the tiny island nations of São Tomé and Príncipe, which had just experienced a US-friendly coup.

I no longer need to defend Peak Oil and Gas. My assistance on that front seems wholly unneeded. It's doing fine all by itself. It is what we are doing in the face of it that is

mankind's greatest challenge, and is the challenge of my future work.

As if to punctuate this report and remind us of the great fear expressed by one attendee at the Berlin conference, on June 16 CNN reported that the security chief for all oil operations in northern Iraq had been assassinated in an ambush as he left for work that morning. This, but one day after another bombing of a major Iraqi pipeline. ∞

About the Author:

Michael C. Ruppert, an honours graduate in political science at UCLA (1973), is a former LAPD narcotics investigator who discovered CIA trafficking in drugs in 1977. He is publisher/editor of the investigative newsletter, *From The Wilderness*. See <http://www.fromthewilderness.com> for additional biographical, news and subscription details (the site is mirrored at <http://www.copvca.com>).

On November 28, 2001, Mike gave his first post-9/11 lecture at Portland State University, Oregon, resulting in *FTW*'s video, *The Truth and Lies About 9/11*, which has sold more than 10,000 copies (see review, NEXUS 9/05). Mike's new book, *Truth and Lies of 9/11: America's Descent into Fascism at the End of the Age of Oil*, will be available in late 2004. Mike was a speaker at NEXUS Conferences in Sydney in 2002 and Amsterdam in 2003 (video and DVD available from NEXUS offices), and many of his articles have been published in NEXUS Magazine, most recently his 2002 interview, "Colin Campbell on Oil", in 10/01.

The full text of this Peak Oil article is at http://www.fromthewilderness.com/free/ww3/062104_berlin_peak.html.

**It is what we are doing
in the face of it that
is mankind's greatest
challenge...**

DEATH BY MEDICINE

Analysis of available statistics reveals a disturbing picture that shows the medical pharmaceutical system is the biggest cause of death and injury in the United States.

Part 1 of 3

**by Carolyn Dean, MD, ND
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ABSTRACT

A definitive review and close reading of medical peer-review journals and government health statistics shows that American medicine frequently causes more harm than good. The number of people having in-hospital, adverse drug reactions (ADR) to prescribed medicine is 2.2 million [Lazarou, *JAMA* 279, 1998].¹

Dr Richard Besser, of the US Centers for Disease Control and Prevention (CDC), in 1995 said the number of unnecessary antibiotics prescribed annually for viral infections was 20 million. Dr Besser, in 2003, now refers to tens of millions of unnecessary antibiotics.^{2, 2a} The number of unnecessary medical and surgical procedures performed annually is 7.5 million.³ The number of people exposed to unnecessary hospitalisation annually is 8.9 million.⁴ The total number of iatrogenic deaths shown in the following table [see next page] is 783,936. It is evident that the American medical system is the leading cause of death and injury in the United States. The 2001 heart disease annual death rate is 699,697; the annual cancer death rate, 553,251.⁵ [Abstract is continued on next page.]

INTRODUCTION

Never before have the complete statistics on the multiple causes of iatrogenesis been combined in one paper. Medical science amasses tens of thousands of papers annually, each one a tiny fragment of the whole picture. To look at only one piece and try to understand the benefits and risks is to stand one inch away from an elephant and describe everything about it. You have to pull back to reveal the complete picture, such as we have done here. Each speciality, each division of medicine, keeps its own records and data on morbidity and mortality, like pieces of a puzzle. But the numbers and statistics were always hiding in plain sight.

We have now completed the painstaking work of reviewing thousands and thousands of studies. Finally putting the puzzle together, we came up with some disturbing answers.

Is American Medicine Working?

At 14% of the gross national product, health-care spending reached US\$1.6 trillion in 2003.¹⁵ Considering this enormous expenditure, we should have the best medicine in the world. We should be reversing disease, preventing disease and doing minimal harm. However, careful and objective review shows the opposite. Because of the extraordinarily narrow context of medical technology through which contemporary medicine examines the human condition, we are completely missing the full picture.

Medicine is not taking into consideration the following monumentally important aspects of a healthy human organism: (a) stress and how it adversely affects the immune system and life processes; (b) insufficient exercise; (c) excessive caloric intake; (d) highly processed and denatured foods grown in denatured and chemically damaged soil; and (e) exposure to tens of thousands of environmental toxins.

Instead of minimising these disease-causing factors, we actually cause more illness through medical technology, diagnostic testing, overuse of medical and surgical procedures and overuse of pharmaceutical drugs. The huge disservice of this therapeutic strategy is the result of little effort or money being appropriated for preventing disease.

Under-reporting of Iatrogenic Events

As few as 5% and only up to 20% of iatrogenic acts are ever reported.^{16, 24, 25, 33, 34} This implies that if medical errors were completely and accurately reported, we would have a

ANNUAL PHYSICAL AND ECONOMIC COST OF MEDICAL INTERVENTION

Condition	Deaths	Cost	Author
Hospital ADR	106,000	\$12 billion	Lazarou ¹ , Suh ⁴⁹
Medical error	98,000	\$2 billion	IOM ⁶
Bedsore	115,000	\$55 billion	Xakellis ⁷ , Barczak ⁸
Infection	88,000	\$5 billion	Weinstein ⁹ , MMWR ¹⁰
Malnutrition	108,800	----	Nurses Coalition ¹¹
Outpatient ADR	199,000	\$77 billion	Starfield ¹² , Weingart ¹¹²
Unnecessary Procedures	37,136	\$122 billion	HCUP ^{3, 13}
Surgery-related	32,000	\$9 billion	AHRQ ⁸⁵
TOTAL	783,936	\$282 billion	

ANNUAL UNNECESSARY MEDICAL EVENTS STATISTICS

Unnecessary Events	People Affected	Iatrogenic Events
Hospitalisation	8.9 million ⁴	1.78 million ¹⁶
Procedures	7.5 million ³	1.30 million ⁴⁰
TOTAL	16.4 million	3.08 million

ABSTRACT (continued)

We could have an even higher death rate by using Dr Lucien Leape's 1997 medical and drug error rate of three million.¹⁴ Multiplied by the fatality rate of 14%, which Leape used in 1994,¹⁶ we arrive at an annual death rate of 420,000 for drug errors and medical errors combined. If we put this number in place of Lazarou's 106,000 drug errors and the Institute of Medicine's (IOM's) 98,000 medical errors (which may have a drug error overlap with Lazarou's study), we could add another 216,000 deaths, making a total of 999,936 deaths annually.

The enumerating of unnecessary medical events is very important in our analysis. Any medical procedure that is invasive and not necessary must be considered as part of the larger iatrogenic picture.

Unfortunately, cause and effect go unmonitored. The figures on unnecessary events represent people ("patients") who are thrust into a dangerous health-care system. They are helpless victims. Each one of these 16.4 million lives is being affected in a way that could have a fatal consequence.

Simply entering a hospital could result in the following:

1. In 16.4 million people, a 2.1% chance of a serious adverse drug reaction¹ (186,000);

2. In 16.4 million people, a 5–6% chance of acquiring a nosocomial infection⁹ (489,500);

3. In 16.4 million people, a 4–36% chance of having an iatrogenic injury in hospital (medical errors and adverse drug reactions)¹⁶ (1.78 million);

4. In 16.4 million people, a 17% chance of a procedural error⁴⁰ (1.3 million).

TEN-YEAR DEATH RATES FOR MEDICAL INTERVENTION

Condition	10-Year Deaths	Author
Adverse Drug Reaction	1.06 million	(1)
Medical error	0.98 million	(6)
Bedsore	1.15 million	(7, 8)
Nosocomial Infection	0.88 million	(9, 10)
Malnutrition	1.09 million	(11)
Outpatients	1.99 million	(12, 112)
Unnecessary Procedures	371,360	(3, 13)
Surgery-related	320,000	(85)
TOTAL	7,841,360 (7.8 million)	

All the statistics above represent a one-year time span. Imagine the numbers over a 10-year period. Working with the most conservative figures from our statistics, we project these 10-year death rates (see above).

Our projected statistic of 7.8 million iatrogenic deaths is more than all the casualties from wars that America has fought in its entire history.

Our projected figures for unnecessary medical events occurring over a 10-year period are also dramatic.

TEN-YEAR STATISTICS FOR UNNECESSARY INTERVENTION

Unnecessary Events	10-year Number	Iatrogenic Events
Hospitalisation	89 million ⁴	17.8 million
Procedures	75 million ³	13.0 million
TOTAL	164 million	30.8 million

These projected figures show that a total of 164 million people, approximately 56% of the population of the United States, have been treated unnecessarily by the medical industry—in other words, about 50,000 people per day.

We have added, cumulatively, figures from 13 references of annual iatrogenic deaths. However, there is invariably some degree of overlap and double-counting that can occur in gathering non-finite statistics. Death numbers don't come with names and birth dates to prevent duplication. On the other hand, there are many missing statistics.

As we will show, only about 5–20% of iatrogenic incidents are even recorded.^{16, 24, 25, 33, 34} And, our outpatient iatrogenic statistics¹¹² only include drug-related events and not surgical cases, diagnostic errors or therapeutic mishaps. We have also been conservative in our inclusion of statistics that were not reported in peer-review journals or by government institutions. For example, the *Chicago Tribune* of July 21, 2002, published an analysis of records from patient databases, court cases, 5,810 hospitals as well as 75 federal and state agencies which found 103,000 cases of death due to hospital infections, 75% of which were preventable.¹⁵² We do not include this figure, but report the lower Weinstein figure of 88,000.⁹

Another figure that we withheld, for lack of proper peer review, was from the National Committee for Quality Assurance's September 2003 report which found that at least 57,000 people die annually from lack of proper care for common diseases such as high blood pressure, diabetes or heart disease.¹⁵³

Overlapping of statistics in "Death by Medicine" may occur with the Institute of Medicine's paper that designates "medical error" as including drugs, surgery and unnecessary procedures.⁶ Since we have also included other statistics on adverse drug reactions, surgery and unnecessary procedures, perhaps as much as 50% of the IOM number could be redundant. However, even taking away half the 98,000 IOM number still leaves us with iatrogenic events as the number-one killer at 734,936 annual deaths.

Even greater numbers of iatrogenic deaths will eventually come to light when all facets of health care delivery are measured. Most iatrogenic statistics are derived from hospital-based studies. However, health care is no longer typically relegated to hospitals. Today, health care is shared by hospitals, outpatient clinics, transitional care, long-term care, rehabilitative care, home care and private practitioners' offices.

In the current climate of reducing health-care costs, the number of hospitals and the length of patient stays are being slashed. These measures will increase the number of patients shunted into outpatient, home care and long-term care, and the iatrogenic morbidity and mortality will also increase.

much higher annual iatrogenic death rate than 783,936. Dr Leape, in 1994, said his figure of 180,000 medical mistakes annually was equivalent to three jumbo-jet crashes every two days.¹⁶ Our report shows that six jumbo jets are now falling out of the sky each and every day!

Correcting a Compromised System

What we must deduce from this report is that medicine is in need of complete and total reform—from deciding the curriculum in medical schools to protecting patients from excessive medical intervention. It is quite obvious that we can't change anything if we are not honest about what needs to be changed. This report simply shows the degree to which change is required. We are fully aware that standing in the way of change are powerful pharmaceutical companies, medical technology companies and special-interest groups with enormous vested interests in the business of medicine. They fund medical research, support medical schools and hospitals and advertise in medical journals. With deep pockets they entice scientists and academics to support their efforts.

Such funding can sway the balance of opinion from professional caution to uncritical acceptance of a new therapy or drug. You only have to look at the number of vested people on hospital, medical and government health advisory boards to see conflict of interest. The public is mostly unaware of these interlocking interests.

For example, a 2003 study found that nearly half of medical school faculty who serve on Institutional Review Boards (IRB) to advise on clinical trial research also serve as consultants to the pharmaceutical industry.¹⁷ The authors were concerned that such representation could cause potential conflicts of interest. A news release by Dr Erik Campbell, the lead author, said: "Our previous research with faculty has shown us that ties to industry can affect scientific behavior, leading to such things as trade secrecy and delays in publishing research. It's possible that similar relationships with companies could affect IRB members' activities and attitudes."¹⁸

Medical Ethics and Conflict of Interest in Scientific Medicine

Jonathan Quick, Director of Essential Drugs and Medicines Policy for the World Health Organization, wrote in a recent *WHO Bulletin* [Dec 17, 2001] that "If clinical trials become a commercial venture in which self interest overrules public interest and desire overrules science, then the social contract which allows research on human subjects in return for medical advances is broken".¹⁹

The former editor of the *New England Journal of Medicine* (*NEJM*), Dr Marcia Angell, struggled to bring the world's attention to the problem of commercialising scientific research in her outgoing editorial, "Is Academic Medicine for Sale?"²⁰ Angell called for stronger restrictions on pharmaceutical stock ownership and other financial incentives for researchers. She said that growing conflicts of interest are tainting science. She warned that "When the boundaries between industry and academic medicine

become as blurred as they are now, the business goals of industry influence the mission of medical schools in multiple ways". She did not discount the benefits of research but said a Faustian bargain now existed between medical schools and the pharmaceutical industry.

Angell left the *NEJM* in June 2000. Two years later, in June 2002, the *NEJM* announced that it will now accept contributions from biased journalists (those who accept money from drug companies) because it is too difficult to find ones that have no ties. Another former editor of the journal, Dr Jerome Kassirer, told ABC News [June 12, 2002] that was just not the case, that there are plenty of researchers who don't work for drug companies.²¹ The report said that one measurable tie between pharmaceutical companies and doctors amounts to over \$2 billion a year spent for over 314,000 events that doctors attend. The ABC report also noted that a survey of clinical trials revealed that when a drug company funds a study, there is a 90% chance that the drug will be perceived as effective—whereas a non-drug-company-funded study will show favourable results 50% of the time. It appears that money can't buy you love, but it can buy you any "scientific" result you want. The only safeguard to reporting these studies was if the journal writers remained unbiased. That is no longer the case.

Cynthia Crossen, a writer on the *Wall Street Journal*, is the author of *Tainted Truth: The Manipulation of Fact in America* (1996), a book about the widespread practice of lying with statistics.²² Commenting on the state of scientific research, she said that "The road to hell was paved with the flood of corporate research dollars that eagerly filled gaps left by slashed government research funding". Her data on financial involvement showed that in 1981 the drug industry "gave" \$292 million to colleges and universities for research; in 1991 it "gave" \$2.1 billion.

The First Iatrogenics Study

Dr Lucien L. Leape opened medicine's Pandora's box with his 1994 *JAMA* paper, "Error in Medicine" [Dec 21].¹⁶ He began the paper by reminiscing about Florence Nightingale's maxim, "First do no harm". But he found evidence of the opposite happening in medicine. He found that Schimmel (1964) reported that 20% of hospital patients suffered iatrogenic injury, with a 20% fatality rate. Steel (1981) reported that 36% of hospitalised patients experienced iatrogenesis, with a 25% fatality rate, and adverse drug reactions were involved in 50% of the injuries. Bedell (1991) reported that 64% of acute heart attacks in one hospital were preventable and were mostly due to adverse drug reactions. However, Leape focused on his and Brennan's "Harvard Medical Practice Study", published in 1991.^{16a} They found that in New York State in 1984 there was a 4% iatrogenic injury rate for patients, with a 14% fatality rate. From the 98,609 patients injured and the 14% fatality rate, Leape estimated that in the whole of the United States, 180,000 people die each year partly as a result of iatrogenic injury.

Why Leape chose to use the much lower figure of 4% injury for his analysis remains in question. Perhaps he wanted to tread

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lightly. If Leape had instead calculated the average rate among the three studies he cites (36%, 20% and 4%), he would have come up with a 20% medical error rate. The number of fatalities that he could have presented, using an average rate of injury and his 14% fatality rate, is an annual 1,189,576 iatrogenic deaths, or over 10 jumbo jets crashing every day.

Leape acknowledged that the literature on medical error is sparse and we are only seeing the tip of the iceberg. He said that when errors are specifically sought out, reported rates are "distressingly high". He cited several autopsy studies with rates as high as 35–40% of missed diagnoses causing death. He also commented that an intensive care unit reported an average of 1.7 errors per day per patient, and 29% of those errors were potentially serious or fatal. We wonder: what is the effect on someone who daily gets the wrong medication, the wrong dose, the wrong procedure; how do we measure the accumulated burden of injury, and when the patient finally succumbs after the 10th error that week, what is entered on the death certificate?

Leape calculated the rate of error in the intensive care unit. First, he found that each patient had an average of 178 "activities" (staff/procedure/medical interactions) a day, of which 1.7 were errors, which means a 1% failure rate. To some, this may not seem like much, but, putting this into perspective, Leape cited industry standards where a 0.1% failure rate would mean: in aviation, two unsafe plane landings per day at [Chicago's] O'Hare airport; in the US Mail, 16,000 pieces of lost mail every hour; or in banking, 32,000 bank checks deducted from the wrong bank account every hour.

Analysing why there is so much medical error, Leape acknowledged the lack of reporting. Unlike a jumbo-jet crash, which gets instant media coverage, hospital errors are spread out over the country in thousands of different locations. They are also perceived as isolated and unusual events. However, the most important reason that medical error is unrecognised and growing, according to Leape, was—and still is—that doctors and nurses are unequipped to deal with human error, due to the culture of medical training and practice.

Doctors are taught that mistakes are unacceptable. Medical mistakes are therefore viewed as a failure of character, and any error equals negligence. We can see how a great deal of "sweeping under the rug" takes place, since nobody is taught what to do when medical error does occur. Leape cited McIntyre and Popper, who said that the "infallibility model" of medicine leads to intellectual dishonesty with a need to cover up mistakes rather than admit them. There are no grand rounds on medical errors; there is no sharing of failures among doctors, and no one to support doctors emotionally when their error harms a patient.

Dr Leape hoped his paper would encourage medical practitioners to "fundamentally change the way they think about errors and why they occur". It's been almost a decade since this groundbreaking work, but the mistakes continue to soar.

One year later, in 1995, a report in *JAMA* [July 5] said: "Over a

million patients are injured in US hospitals each year, and approximately 280,000 die annually as a result of these injuries. Therefore, the iatrogenic death rate dwarfs the annual automobile accident mortality rate of 45,000 and accounts for more deaths than all other accidents combined."²³

At a press conference in 1997, Dr Leape released a nationwide poll on patient iatrogenesis, conducted by the National Patient Safety Foundation (NPSF) which is sponsored by the American Medical Association. (Dr Leape is a founding member of the NPSF.) The survey found that more than 100 million Americans have been impacted directly and indirectly by a medical mistake. Forty-two per cent were directly affected and 84% personally knew of someone who had experienced a medical mistake.¹⁴

Dr Leape at this press conference also updated his 1994 statistics, saying that medical errors in in-patient hospital settings nationwide, as of 1997, could be as high as three million and could cost as much as \$200 billion. Leape used a 14% fatality rate to determine a medical error death rate of 180,000 in 1994.¹⁶ Using Leape's base number of three million errors, the annual deaths figure for 1997 could be as much as 420,000 for in-patients alone. This does not include nursing home deaths or people in the outpatient community dying of drug side effects or as a result of medical procedures.

Only a Fraction of Medical Errors Are Reported

Leape, in 1994, said that he was well aware that medical errors were not being reported.¹⁶

According to a study in two obstetrics units in the UK, only about one quarter of the adverse incidents in the units is ever reported, for reasons of protecting staff or preserving reputations or for fear of reprisals including lawsuits.²⁴

An analysis by Wald and Shojania [2001] found that only 1.5% of all adverse events result in an incident

report, and only 6% of adverse drug events are identified properly. The authors learned that the American College of Surgeons gives a very broad guess that surgical incident reports routinely capture only 5–30% of adverse events. In one surgical study, only 20% of surgical complications resulted in discussion at morbidity and mortality rounds.²⁵ From these studies, it appears that all the statistics that are gathered may be substantially underestimating the number of adverse drug and medical therapy incidents. This also underscores the fact that our mortality statistics are actually conservative figures.

An article in *Psychiatric Times* [Grinfield, April 2000] outlines the stakes involved with reporting medical errors.²⁶ The author found that the public is fearful of suffering a fatal medical error, and doctors are afraid they will be sued if they report an error.

This brings up the obvious question: who is reporting medical error? Usually it is the patient or the patient's surviving family. If no one notices the error, it is never reported.

Janet Heinrich, an associate director at the US General Accounting Office which is responsible for health financing and public health issues, testifying before a House subcommittee on

This brings up the obvious question: who is reporting medical error?

Usually it is the patient or the patient's surviving family.

If no one notices the error, it is never reported.

medical errors, said that "The full magnitude of their threat to the American public is unknown". She added that "Gathering valid and useful information about adverse events is extremely difficult". She acknowledged that the fear of being blamed and the potential for legal liability played key roles in the under-reporting of errors. The *Psychiatric Times* noted that the American Medical Association is strongly opposed to mandatory reporting of medical errors.²⁶ And if doctors aren't reporting, what about nurses? In a survey of nurses, they also did not report medical mistakes for fear of retaliation.²⁷

Standard medical pharmacology texts admit that relatively few doctors ever report adverse drug reactions to the Food and Drug Administration.²⁸ The reasons range from not knowing such a reporting system exists to fearing being sued because they prescribed a drug that caused harm.²⁹ However, it is this tremendously flawed system of voluntary reporting from doctors that we depend on to know whether a drug or a medical intervention is harmful.

Pharmacology texts will also tell doctors how hard it is to separate drug side effects from disease symptoms. Treatment failure is most often attributed to the disease and not to the drug or the doctor. Doctors are warned that "Probably nowhere else in professional life are mistakes so easily hidden, even from ourselves".³⁰ It may be hard to accept, but not difficult to understand, why only one in 20 side effects is reported to either hospital administrators or to the FDA.^{31, 31a}

If hospitals admitted to the actual number of errors and mistakes, which is about 20 times what is reported, they would come under intense scrutiny.³² Jerry Phillips, associate director of the Office of Post-Marketing Drug Risk Assessment at the FDA, confirmed this number: "In the broader area of adverse drug reaction data, the 250,000 reports received annually probably represent only 5% of the actual reactions that occur."³³ Dr Jay Cohen, who has extensively researched adverse drug reactions, commented that because only 5% of adverse drug reactions are being reported, there are, in reality, five million medication reactions each year.³⁴

It remains that whatever figure you choose to believe about the side effects from drugs, all the experts agree that you have to multiply that by 20 to get a more accurate estimate of what is really occurring in the burgeoning "field" of iatrogenic medicine.

A 2003 survey is all the more distressing because there seems to be no improvement in error reporting, even with all the attention on this topic. Dr Dorothea Wild surveyed medical residents at a community hospital in Connecticut. She found that only half of the residents were aware that the hospital had a medical error reporting system, and the vast majority didn't use it at all. Dr Wild said this does not bode well for the future. If doctors don't learn error-reporting in their training, they will never use it. And she added that error reporting is the first step in finding out where the gaps in the medical system are and fixing them. That first baby step has not even begun.³⁵

Public Suggestions on Iatrogenesis

In a [2002] telephone survey, 1,207 adults were asked to indicate how effective they thought the following would be in reducing preventable medical errors that resulted in serious harm:³⁶

- giving doctors more time to spend with patients: very effective, 78%;
- requiring hospitals to develop systems to avoid medical errors: very effective, 74%;
- better training of health professionals: very effective, 73%;
- using only doctors specially trained in intensive care medicine on intensive care units: very effective, 73%;
- requiring hospitals to report all serious medical errors to a state agency: very effective, 71%;
- increasing the number of hospital nurses: very effective, 69%;
- reducing the work hours of doctors-in-training to avoid fatigue: very effective, 66%;
- encouraging hospitals to voluntarily report serious medical errors to a state agency: very effective, 62%.

DRUG IATROGENESIS

Drugs comprise the major treatment modality of scientific medicine. With the discovery of the "germ theory", medical scientists convinced the public that infectious organisms were the cause of illness. Finding the "cure" for these infections proved much harder than anyone imagined.

From the beginning, chemical drugs promised much more than they delivered. But far beyond not working, the drugs also caused incalculable side effects. The drugs themselves, even when properly prescribed, had side effects that could be fatal, as Lazarou's study¹ showed. But human error could make the situation even worse.

If hospitals admitted to the actual number of errors and mistakes, which is about 20 times what is reported, they would come under intense scrutiny.

Medication Errors

A survey of a 1992 national pharmacy database found a total of 429,827 medication errors from 1,081 hospitals. Medication errors occurred in 5.22% of patients admitted to these hospitals each year. The authors concluded that a minimum of 90,895 patients annually were harmed by medication errors in the country as a whole.³⁷

A 2002 study showed that 20% of hospital medications for patients had dosage mistakes. Nearly 40% of these errors were considered potentially harmful to the patient. In a typical 300-patient hospital, there were 40 errors per day.³⁸

Problems involving patients' medications were even higher the following year. The error rate intercepted by pharmacists in this study was 24%, making the potential minimum number of patients harmed by prescription drugs 417,908.³⁹

Recent Adverse Drug Reactions

More recent studies on adverse drug reactions show that the number may have increased compared with the 1994 figure (published in Lazarou's 1998 *JAMA* article). A study published in February 2003 [*Ann. Int. Med.*] followed 400 patients after discharge from a tertiary care hospital (hospital care that requires highly specialised skills, technology or support services). Seventy-six patients (19%) had adverse events. Adverse drug events were the most common at 66%. The next most common events were procedure-related injuries at 17%.⁴⁰

In an *NEJM* study [April 17, 2003], an alarming one-in-four patients suffered observable side effects from the more than 3.34 billion drug prescriptions filled in 2002.⁴¹ One of the doctors who

produced the study was interviewed by Reuters and commented that "With these 10-minute appointments, it's hard for the doctor to get into whether the symptoms are bothering the patients".⁴² William Tierney, who editorialised on the *NEJM* study, said that "given the increasing number of powerful drugs available to care for the aging population, the problem will only get worse".

The drugs with the worst record of side effects were the SSRIs, the NSAIDs and the calcium-channel blockers. Reuters also reported that prior research has suggested that nearly 5% of hospital admissions—over one million per year—are the result of drug side effects. But most of the cases are not documented as such. The study found one of the reasons for this failure was that, in nearly two-thirds of the cases, doctors couldn't diagnose drug side effects or the side effects persisted because the doctor failed to heed the warning signs.

Medicating Our Feelings

We only need to look at the side effects of antidepressant drugs, which give hope to a depressed population. Patients seeking a more joyful existence and relief from worry, stress and anxiety fall victim to the messages blatantly displayed on TV and billboards. Often, instead of finding relief, they fall victim to myriad iatrogenic side effects of antidepressant medications.

Furthermore, a whole generation of antidepressant users has resulted from young people growing up on Ritalin. Medicating youth and modifying their emotions must have some impact on how they learn to deal with their feelings. They learn to equate coping with drugs and not with their inner resources. As adults, these medicated youth reach for alcohol, drugs or even street drugs to cope. According to *JAMA* [Aug 22–29, 2001], "Ritalin acts much like cocaine".⁴³

Mood-modifying drugs, such as Prozac or Zoloft, are marketed in such a way as to make them not only socially acceptable but almost a necessity in today's stressful world.

Television Diagnosis

In order to reach the widest audience possible, drug companies are no longer just targeting medical doctors with their message about antidepressants. By 1995, drug companies had tripled the amount of money allotted to direct advertising of prescription drugs to consumers. The majority of the money is spent on seductive television ads. From 1996 to 2000, spending rose from \$791 million to nearly \$2.5 billion [*NEJM*, Feb 14, 2002].⁴⁴ Even though \$2.5 billion may seem like a lot, the authors comment that it only represents 15% of the total pharmaceutical advertising budget. According to medical experts, "there is no solid evidence on the appropriateness of prescribing that results from consumers requesting an advertised drug". However, the drug companies maintain that direct-to-consumer advertising is educational.

Dr Sidney M. Wolfe, of the Public Citizen Health Research Group in Washington, DC, argues that the public is often misinformed about these ads.⁴⁵ People want what they see on television and are told to go to their doctor for a prescription. Doctors in

private practice either acquiesce to their patients' demands for these drugs or spend valuable clinic time trying to talk patients out of unnecessary drugs. Dr Wolfe remarks that one important study found that people mistakenly believe the "FDA reviews all ads before they are released and allows only the safest and most effective drugs to be promoted directly to the public".⁴⁶

Continued next issue...

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Editor's Note:

Due to space constraints, we are unable to publish the endnotes accompanying this article (apart from including some brief details within the text). Instead, we have posted them with the article on our website, <http://www.nexusmagazine.com>. Readers without Internet access can request a copy of the endnotes from their nearest NEXUS Office.

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THE HIDDEN DANGERS OF SOY ALLERGENS

The huge rise in allergic reactions to soy is in line with the increasing use of soy products in processed foods during the 1990s, and should be regarded as a major public health concern.

by Kaayla T. Daniel, PhD, CCN
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From Chapter 23 of her book
The Whole Soy Story: The Dark Side of America's Favorite Health Food
(NewTrends Publishing, 2004)

Website:
<http://www.wholesoystory.com>

THE RISE IN SOY ALLERGIES

Soy is one of the top allergens—substances that cause allergic reactions. In the 1980s, Stuart Berger, MD, labelled soy one of the seven top allergens—one of the "sinister seven". At the time, most experts listed soy around tenth or eleventh—bad enough, but way behind peanuts, tree nuts, milk, eggs, shellfish, fin fish and wheat. Today, soy is widely accepted as one of the "big eight" that cause immediate hypersensitivity reactions.¹⁻⁴

Allergies are abnormal inflammatory responses of the immune system to dust, pollen, a food or some other substance. Those that involve an antibody called immunoglobulin E (IgE) occur immediately or within an hour. Reactions may include coughing, sneezing, runny nose, hives, diarrhoea, facial swelling, shortness of breath, a swollen tongue, difficulty swallowing, lowered blood pressure, excessive perspiration, fainting, anaphylactic shock or even death.⁴⁻⁹

Delayed allergic responses to soy are less dramatic, but are even more common. These are caused by antibodies known as immunoglobulins A, G or M (IgA, IgG or IgM) and occur anywhere from two hours to days after the food is eaten. These have been linked to sleep disturbances, bedwetting, sinus and ear infections, crankiness, joint pain, chronic fatigue, gastrointestinal woes and other mysterious symptoms.⁴⁻⁹

Food "intolerances", "sensitivities" and "idiosyncrasies" to soy are commonly called "food allergies", but differ from true allergies in that they are not caused by immune system reactions but by little-understood or unknown metabolic mechanisms.⁷⁻⁹ Strictly speaking, gas and bloating—common reactions to soy and other beans—are not true allergic responses. However, they may serve as warnings of the possibility of a larger clinical picture involving allergen-related gastrointestinal damage.

PROFIT vs RISK

The soybean industry knows that some people experience severe allergic reactions to its products. In a recent petition to the US Food and Drug Administration (FDA), Protein Technologies International (PTI) identified "allergenicity" as one of the "most likely potential adverse effects associated with ingestion of large amounts of soy products". Yet PTI somehow concluded that "the data do not support that they would pose a substantial threat to the health of the US population".¹⁰

This statement is hardly reassuring to the many children and adults who suffer allergies to soy products. And it ignores a substantial body of evidence published during the 1990s showing that some of these people learn for the first time about their soy allergies after experiencing an unexpectedly severe or even life-threatening reaction.

Severe reactions to soy are rare compared to reactions to peanuts, tree nuts, fish and shellfish, but Swedish researchers recently concluded that "Soy has been underestimated as a cause of food anaphylaxis" (Foucard T., Malmheden Yman, I., *Allergy* 1999, 53(3):261-265).¹¹

A BAD HAMBURGER

The Swedes began looking into a possible soybean connection after a young girl suffered an asthma attack and died after eating a hamburger that contained only 2.2 per cent soy protein. A team of researchers collected data on all fatal and life-threatening reactions caused by food between 1993 and 1996 in Sweden, and found that the soy-in-the-hamburger case was not a fluke and that soy was indeed the culprit. They evaluated

61 cases of severe reactions to food, of which five were fatal, and found that peanut, soy and tree nuts caused 45 of the 61 reactions. Of the five deaths, four were attributed to soy. The four children who died from soy had known allergies to peanuts but not to soy. The amount of soy eaten ranged from one gram to 10 grams—typical of the low levels found when soy protein is used as a meat-extending additive in ready-made foods such as hamburgers, meatballs, spaghetti sauces, kebabs and sausages or as an extender in breads and pastries.

When soy is "hidden" in hamburgers and other "regular" foods, people often miss the soy connection. And allergic reactions to soy do not always occur immediately, making cause and effect even harder to establish. As reported in the Swedish study, no symptoms—or very mild symptoms—occurred for 30 to 90 minutes after the consumption of the food containing soy; then the children suffered fatal asthma attacks. All had been able to eat soy without any adverse reactions right up until the dinner that caused their deaths.

The Swedish study was not the first to report "fatal events" after eating soy. Food anaphylaxis is most often associated with reactions to peanuts, tree nuts, shellfish and occasionally fish or milk, but soy has its own rap sheet. Anaphylactic reactions to bread, pizzas or sausage extended with soy protein date back at least to 1961. Subsequent studies have confirmed that the risk may be rare but is very real.¹²⁻²⁰

The increasing amount of "hidden" soy in the food supply is undoubtedly responsible for triggering many allergic reactions not attributed to soy. French researchers who studied the frequency of anaphylactic shocks caused by foods reported that the food allergen remained unknown in 25 per cent of cases. They noted the prevalence of "hidden" and "masked" food allergens and stated that they saw "a strikingly increased prevalence of food-induced anaphylactic shock in 1995 compared to a previous study from 1982".²¹ This period coincided with a huge increase in the amount of soy protein added to processed foods. (In fact, the amount has continued to rise. Per capita consumption of soy protein increased from 0.78 g/day in 1998 to 2.23 g/day in 2002, according to industry estimates obtained by the Solae Company which, in March 2004, filed a petition seeking FDA approval of a health claim for soy protein and cancer reduction.^{21a})

None of these studies has attracted much media attention. Nor have health agencies issued alerts. For example, Ingrid Malmheden Yman, PhD, of the Sweden National Food Administration and co-author of the study, wrote to the Ministry of Health in New Zealand at the request of an allergy sufferer. Two years before the article (first published in Swedish) came out in English, she informed the agency that children with severe allergy to peanut should avoid intake of soy protein. To be on the safe side, she further advised parents to make an effort to "avoid sensitisation" by limiting consumption of both peanuts and soybeans during the third trimester of pregnancy and during breastfeeding, and by avoiding the use of soy formula.²²

Controversy has raged since the 1920s as to whether or not babies could be sensitised to allergens while still *in utero*. In 1976, researchers learned that the foetus is capable of producing IgE antibodies against soy protein during early gestation, and newborns can be so sensitised through the breastmilk of the mother that they later react to foods they've "never eaten".^{23, 24} Families who need to take these precautions seriously include those with known peanut and/or soy allergies, vegetarians who would otherwise eat a lot of soy foods during pregnancy or breastfeeding, and parents considering the use of soy infant formula.

Because the numbers of children with allergies to peanuts are increasing, we can expect to see greater numbers of children and adults reacting severely to soy. Peanuts and soybeans are members of the same botanical family, the grain-legume type, and scientists have known for years that people allergic to one are often allergic to the other.

Other children at risk for an undetected but potentially life-threatening soy allergy include those with allergies to peas, lima beans or other beans, a diagnosis of asthma, rhinitis, eczema or dermatitis, or family members with a history of any of those diseases. Reactions to foods in the same botanical family can be cumulative, resulting in symptoms far more severe than either alone.²⁵⁻³²

SOY'S ALLERGENIC PROTEINS

Scientists are not completely certain which components of soy cause allergic reactions. They have found at least 16 allergenic proteins, and some researchers pinpoint as many as 25 to 30. Laboratories report immune system responses to multiple fractions of the soy protein, with no particular fraction being the most consistently antigenic, i.e., capable of causing the production of an antibody.³³⁻³⁶

Some of the most allergenic fractions appear to be the Kunitz and Bowman-Birk trypsin inhibitors. Food processors have tried in vain to deactivate these troublesome proteins completely without irreparably damaging the remainder of the soy

protein (see chapter 12). Having failed to accomplish this, the soy industry has decided to promote these "antinutrients" as cancer preventers. To date, its proof remains slim, although cancer statistics might improve if enough people died from anaphylactic shock first.

Although extremely rare, death from allergic reaction to trypsin inhibitor has been a matter of public record since the *New England Journal of Medicine* carried a report in 1980.^{37, 38} The Kunitz trypsin inhibitor has been identified as one of three allergic components in soy lecithin—a soy product often considered hypoallergenic (i.e., it has diminished potential for causing an allergic reaction) because it is not supposed to include any soy protein, but invariably contains trace amounts.³⁹

Soybean lectin—another antinutrient now promoted as a disease preventer—has also been identified as an allergen.⁴⁰ Whenever there is a damaged intestinal lining or "leaky gut", soy lectins can easily pass into the bloodstream, triggering allergic

Allergic reactions to soy do not always occur immediately, making cause and effect even harder to establish.

reactions (see chapter 14). Indeed, this is very likely because both soy allergens and saponins (an antinutrient discussed in chapter 15) can damage the intestines.

Histamine toxicity can also resemble allergic reactions. In allergic persons, mast cells release histamine, causing a response that strongly resembles an allergic reaction to food. In cases of histamine toxicity, the histamine comes ready-made in the food. This is most often associated with reactions to cheese and fish, but soy sauce also contains high levels of histamine. Researchers who have calculated the histamine content of foods consumed at a typical oriental meal report that histamine intake may easily approach toxic levels.⁴¹

PROCESSING MATTERS

The way that the soybean is grown, harvested, processed, stored and prepared in the kitchen can affect its allergenicity. Raw soybeans are the most allergenic, while old-fashioned fermented products (miso, tempeh, natto, shoyu and tamari) are the least. Modern soy protein products processed by heat, pressure and chemical solvents lose some of their allergenicity, but not all. Partially hydrolysed proteins and soy sprouts, which are quickly or minimally processed, remain highly allergenic.^{42, 43}

The industry newsletter, *The Soy Connection*, states that highly refined oils and lecithin "are safe for the soy-allergic consumer".⁴⁴

Unfortunately, many allergic persons who have trusted such reassurances have ended up in the hospital. Highly susceptible people cannot use either safely. Adverse reactions

to soy oils—taken either by mouth as food or via tube-feeding—range from the nuisance of sneezing to the life-threatening danger of anaphylactic shock.⁴⁵⁻⁵¹

If soy oil and lecithin were 100 per cent free of soy protein, they would not provoke allergic symptoms. Variable conditions and the quality control and processing methods used when the vegetable oil industry separates soybean protein from the oil make the presence of at least trace amounts of soy protein possible, even likely. Though healthier in many respects, the cold-pressed soy oils sold in health food stores can be deadly for the allergic consumer. They may contain as much as 100 times the amount of trace protein found in the highly refined soy oils sold in supermarkets.^{52, 53}

Soy protein is likely to appear in margarine. Above and beyond any stray protein that remains after the processing of the soy oil, soy protein isolates or concentrates are commonly used by food manufacturers to improve the texture or spreadability of these products. This occurs most often in low-fat or "low trans" products (see chapter 6).

HIDDEN DANGER

People allergic to soy protein face constant danger. Hidden soy exists in thousands of everyday foods, cosmetics and industrial products such as inks, cardboards, paints, cars and mattresses. The four Swedish fatalities are only the best known of thousands of reported cases of people who experienced severe allergic reactions to soy after inadvertently eating foods that contained soy-bean proteins.⁵⁴⁻⁵⁶

Of 659 food products recalled by the FDA in 1999, 236 (36 per cent) were taken off the market because of undeclared allergens.

The three factors responsible for the undeclared allergens were: omissions and errors on labels (51 per cent), cross contamination of manufacturing equipment (40 per cent), and errors made by suppliers of ingredients (five per cent). It wasn't inspectors, however, but ticked-off US consumers who fingered 56 per cent of the undeclared allergens.⁵⁷

During 2002, the Canadian Food Inspection Agency (CFIA), which takes soy allergies seriously, recalled bagels, doughnuts, rolls, pizza and other items containing undeclared soy protein.⁵⁸ Although agencies in many countries claim to be stepping up efforts to enforce labelling laws, enforcement is difficult even when officials make it a priority. The chief problem is that few methods reliably detect and quantify minute amounts of allergens in foods.⁵⁹

Even when soy-containing ingredients are accurately listed on food labels, consumers may easily miss the soy connection. A 2002 study of 91 parents of children allergic to peanuts,

milk, egg, soy, and/or wheat revealed that most parents failed to identify allergenic food ingredients correctly, and that milk and soy presented the most problems. Only 22 per cent of the parents with soy allergies correctly identified soy protein in seven products. The researchers concluded, "These results strongly support the need for improved labelling with plain-English terminology and allergen warnings as well as the need for diligent education of patients reading labels".⁶⁰

CLEARING THE AIR

Allergic reactions occur not only when soy is eaten but when soybean flour or dust is inhaled. Among epidemiologists, soybean dust is known as an "epidemic asthma agent". From 1981 to 1987, soy dust from grain silo unloading in the harbour of Barcelona, Spain, caused 26 epidemics of asthma, seriously jeopardising the health of 687 people and leading to 1,155 hospitalisations. No further epidemics occurred after filters were installed, but a minor outbreak in 1994 established the need for diligent monitoring of preventive measures.^{61, 62}

PARENT WARNING!

HIDDEN SOY – HIDDEN SOY ALLERGIES

If your child is allergic to peanuts, you must eliminate all soy as well as all peanuts from your child's diet. Your child's life may depend upon it.

Take care, even if your child has never reacted poorly to soy in the past. Some sensitive children have "hidden" soy allergies that manifest for the first time with a severe—even fatal—reaction to even the low levels of "hidden" soy commonly found in processed food products. Those at the highest risk suffer from asthma as well as peanut allergy.

Other risk factors are other food allergies, a family history of peanut or soy allergies, a diagnosis of asthma, rhinitis or eczema, or a family history of these diseases.

(Source: Letter from Ingrid Malmheden Yman, PhD, Senior Chemist, Sweden National Food Administration, to the New Zealand Ministry of Health, 30 May 1997)

Reports of the epidemic in Barcelona led epidemiologists in New Orleans to investigate cases of epidemic asthma that occurred from 1957 to 1968 when more than 200 people sought treatment at Charity Hospital. Investigations of weather patterns and cargo data from the New Orleans harbour identified soy dust from ships carrying soybeans as the probable cause. No association was found between asthma epidemic days and the presence of wheat or corn on ships in the harbour. The researchers concluded, "The results of this analysis provide further evidence that ambient soy dust is very asthmogenic and that asthma morbidity in a community can be influenced by exposures in the ambient atmosphere".⁶³

The first report of "occupational asthma" appeared in the *Journal of Allergy* in 1934. W. W. Duke described six persons whose asthma was triggered by dust from a nearby soybean mill and predicted that soy could become a major cause of allergy in the future.⁶⁴ Today it is well established that soybean dust is an occupational hazard of working in bakeries, animal feed factories, food processing plants, and health food stores and co-ops with bulk bins. Dust explosions are a safety hazard at soybean processing plants.⁶⁴⁻⁶⁸

Most victims develop their "occupational asthma" over a period of time. In one well-documented case, a 43-year-old woman spent six years working at a food processing plant, in which soybean flour was used as a meat extender, before she developed asthma. Symptoms of sneezing, coughing and wheezing would begin within minutes of exposure to soy flour and resolve two hours after the exposure ceased.⁶⁹

Soy formula is a far from optimal solution for bottle-fed infants who are allergic to dairy formulas.

Rare reactions to soy have also occurred in asthmatic patients using inhalers with bronchodilators containing soy-derived excipients. Bronchospasms with laryngospasms and cutaneous rash have occurred even in patients who were otherwise not affected by soy allergy.⁷⁰

FUDGING STATISTICS ON SOY INFANT FORMULA

For years, the soy industry billed soy formula as "hypoallergenic". Herman Frederic Meyer, MD, of the Department of Pediatrics, Northwestern University Medical School, Chicago, categorised soy formulas as "hypoallergic preparations" in his 1961 textbook, *Infant Foods and Feeding Practice*, and named Mull Soy, Sobee, Soyolac and Soyola products as good examples.⁷¹

Over the years, the soy industry has promoted this and similar misinformation in advertising, labels and educational literature by ignoring relevant studies in favour of largely irrelevant studies based on guinea pigs.^{72,73}

As late as 1989, John Erdman, PhD, a researcher honoured in 2001 by the soy industry for his "outstanding contributions to increasing understanding and awareness of the health benefits of soy foods and soybean constituents", claimed "hypoallergenicity" for soy in the *American Journal of Clinical Nutrition*.^{74,75}

A subsequent Letter to the Editor corrected his misinformation.^{74,75}

The soy industry today has shifted from claiming hypoallergenicity for soy to minimising its extent. That has been fairly easy, for no one seems to know quite how many sufferers there are. Estimates are rough at best because diagnoses of allergy include anything from parental complaints of spitting, fussiness, colic and vomiting to laboratory provings using RAST and ELISA tests, to clinical challenges and elimination diets.

Because the tests are not completely reliable and anecdotal evidence tends to be taken lightly, many cases are not counted. The figures cited most often delineate 0.3 to 7.5 per cent of the population as allergic to cow's milk and 0.5 to 1.1 per cent as allergic to soy. However, evidence suggests that soy protein is at least as antigenic as milk protein, especially when gastrointestinal complaints and delayed hypersensitivity (non-IgE) reactions are taken into account.⁷⁶⁻⁸¹

On the soy industry website "Soy and Human Health", Clare Hasler, PhD, of the University of Illinois Urbana, Champaign, picks the low 0.5 per cent figure and claims that soy protein is rated 11th among foods in terms of allergenicity.⁸²

This may have been true in the 1970s (her source is dated 1979), but soy is widely acknowledged as one of the "big eight" today.

Indeed, one prominent researcher puts soy in the "top six" and another in the "top four" foods causing hypersensitivity reactions in children.^{83,84}

THE MARGARINE CONNECTION

Allergies to pollen dust, dander and foods are on the increase wherever margarine replaces butter. That's the conclusion of Finnish researchers who found that children who developed allergies ate less butter and more margarine compared with children who did not develop allergies. Nearly all commercially marketed margarines are made with soy oil.

The study showed that children with eczema, dermatitis and other itchy skin conditions consumed an average of 8 grams of margarine for every 1,000 calories compared to 6 grams among children without allergies, and 9 grams of butter compared to 11 grams of butter or more among the children without the allergies.

Laboratory testing revealed that the allergic children had a higher ratio of polyunsaturated to saturated fat and a lower percentage of myristic acid (an indicator of saturated fat intake) than children without allergies. They also showed lower levels of the EPA/DHA polyunsaturated oils found in fish.

The inescapable conclusion: butter is better.

(Source: Dunder, T., Kuikka L. et al., "Diet, serum fatty acids and atopic diseases in childhood", *Allerg 2001*, 56(5):425-428)

Soy formula is a far from optimal solution for bottle-fed infants who are allergic to dairy formulas. The plant oestrogens in soy can interfere with proper development of the infant's thyroid, brain and reproductive systems. Soy formula also falls short as a solution to cow's milk allergy (see chapter 22 and elsewhere in this article).

Symptoms such as diarrhoea, bloating, vomiting and skin rashes sometimes go away when infants are switched from dairy formula to soy, but the relief is usually only temporary. In many infants, the symptoms return with a vengeance within a week or two.

As Dr Stefano Guandalini, of the Department of Pediatrics, University of Chicago, writes, "A significant number of children with cow's milk protein intolerance develop soy protein intolerance when soy milk is used in dietary management".⁸⁵

Interestingly enough, researchers recently detected and identified a soy protein component that cross-reacts with caseins from cow's milk.⁸⁶ Cross reactions occur when foods are chemically related to each other.

Adverse reactions caused by soybean formulas occur in at least 14 to 35 per cent of infants allergic to cow's milk, according to Dr Matthias Besler of Hamburg, Germany, and the international team of allergy specialists who help him with the informative website, <http://www.food-allergens.de/contents-2000.html>.⁸⁷

Dr Guandalini's helpful website, <http://www.emedicine.com/ped/topic2128.htm>, reports the results of an unpublished study of 2,108 infants and toddlers in Italy, of which 53 per cent of the babies under three months old who had reacted poorly to dairy formula also reacted to soy formula. Although experts generally attribute this high level of reactivity to the immature—hence vulnerable—digestive tract of infants, this study showed that 35 per cent of the children over one year old who were allergic to cow's milk protein also developed an allergy to soy protein. In all, 47 per cent had to discontinue the soy formula.⁸⁸

Infants who are allergic to dairy formulas are allergic to soy formulas so often that researchers have begun advising paediatricians to stop recommending soy and start prescribing hypoallergenic hydrolysed casein or whey formulas.

A study of 216 infants at high risk for developing allergies revealed comparable levels of eczema and asthma whether they were drinking cow's milk formula or the more "hypoallergenic" soy formula.

Upon conclusion of the study, the message was clear: only "exclusive breastfeeding or feeding with a partial whey hydrolysate formula is associated with the lower incidence of atopic disease and food allergy. This is a cost-effective approach to the prevention of allergic disease in children".⁸⁹

No one can make a good argument that soy formula is hypoallergenic, but many still say that its soy proteins may be less sensitising than cow's milk proteins. When babies develop soy intolerance, the blame tends to go to earlier damage done to the intestines by cow's milk protein.⁹⁰

FORMULA FOR DISASTER: AROUND THE WORLD WITH SOY ALLERGIES

Allergic reactions occur to soy formula in children all over the world, particularly those affected by other allergies:

- Victoria, Australia – Soy milk allergies in 47 per cent of 97 children with cow's milk allergies;
- Berlin, Germany – Soybean allergies in 16 per cent of children with atopic dermatitis;
- Bonn, Germany – Soybean allergies in 10 per cent of children with suspected food allergy;
- Milan, Italy – Soybean allergies in 17 per cent of children with food intolerance; soybean allergies in 21 per cent of 704 atopic children;
- Rome, Italy – Soy allergies found in 22 per cent of 371 children with food allergy;
- Malmö, Sweden – Soybean allergies in 35 per cent of infants with cow's milk allergies;
- San Diego, USA – Soybean allergies found in 25 per cent of infants sensitive to cow's milk;
- Bangkok, Thailand – Soybean allergies in 17 per cent of children sensitive to cow's milk;
- Thailand – Soy allergies in 4 per cent of 100 asthmatic children;
- New Haven, CT, USA – Soy and milk allergies found in 62 per cent and soy and gluten allergies found in 35 per cent of infants and children with multiple gastrointestinal allergies;
- Ohio, USA – Sensitivity to soy formula found in 5 per cent of 148 children with respiratory allergies.

(Source: Literature review on Dr Matthias Besler's website, <http://www.food-allergens.de.contents-2000.html>; for full citations, see endnotes 110–121)

This has led some physicians to recommend starting infants off from birth on soy formula. This does not stop a tendency to develop food allergies. As C. D. May, of the Department of Pediatrics, National Jewish Hospital and Research Center, Denver, put it, "Feeding a soy product from birth for 112 days did not prevent a brisk antibody response to cow milk introduced subsequently, comparable to or greater than the antibody response seen when cow milk products were fed from birth".⁹¹

BOWELLED OVER

People diagnosed with "allergic colitis" suffer from bloody diarrhoea, ulcerations and tissue damage, particularly to the sigmoid area of the descending colon. The leading cause in infants is cow's milk allergy, but 47 to 60 per cent of those infants react the same way to soy formula. Curiously, inflammatory changes in the mucus lining of the intestines appear even in infants who seem to be tolerating soy: no diarrhoea, no hives, no blood in the stool or other obvious allergic signs. One study showed that clinical reactions occurred in 16 per cent of the children on soy formula, but that histological and enzymological intestinal damage occurred in an additional 38 per cent of the children. This second group showed damage to the intestinal cells and tissues as viewed under a microscope and through blood tests, indicating increased levels of xylose (an indigestible sugar used to diagnose "leaky gut" and other intestinal disorders). The researchers also found depleted levels of sucrase, lactase, maltase and alkaline phosphatase—evidence that the infants' digestive capacity was compromised, their stress levels were increased and immune systems challenged.⁹²

Most gastrointestinal problems connected to soy formula involve non-IgE delayed immune reactions.⁹³ However, local IgE reactions may contribute to these problems by triggering the formation of immune complexes that alter the permeability of the gut mucosa. As C. Carini, the lead author in an *Annals of Allergy* study published in 1987, wrote, "The resultant delayed onset symptoms could be viewed as a form of serum sickness with few or many target organs affected".⁹⁴

The baby's small intestine is at special risk. Scanning electron microscopy and biopsies have revealed severe damage to the small intestine, including flattening and wasting away of the projections (known as *villi*) and cellular overgrowth of the pits (known as *crypts*). Allergic reaction may not be the sole cause here, as the observed destruction dovetails with that caused by soy antinutrients known as lectins and saponins, with the lectins possibly doing double duty as allergic proteins (see chapters 14 and 15). Villi are the projections clustered over the entire mucous surface of the small intestine where nutrient absorption takes place. Flattening and atrophy of the villi lead to malnutrition and failure to thrive, with a clinical picture very similar to that found in children and adults afflicted with coeliac disease.⁹⁵⁻⁹⁷

Coeliac disease is a serious malabsorption syndrome most commonly associated with gluten (a protein fraction found in wheat and some other grains) and dairy intolerance. Few people know that there is also a connection with soy. Some adults with coeliac disease experience diarrhoea, headache, nausea and flatulence even on a gluten-free diet when they eat a tiny amount of soy. And a study of 98 infants and children with multiple gastrointestinal allergies revealed that 62 per cent had both soy and milk allergies and 35 per cent both soy and gluten.^{98, 99}

OUTGROWING SOY ALLERGIES

Allergy specialists say that "most" young children "outgrow" their sensitivities.¹⁰⁰ This makes sense—to a point. If infants develop soy allergies because of immature digestive tracts and immune systems, the risk of developing a soy allergy would decrease with age and many children would outgrow their soy allergies. Yet other studies—even by the same authors—reveal that only a minority of subjects outgrows them.

One study showed that only 26 per cent of children suffering from soy, egg, milk, wheat and peanut allergies lost their hypersensitivity after one year. While peanut—soy's even more allergenic relative—may have skewed those results, another study found that only two out of eight infants outgrew soy allergies after 25 months.¹⁰¹⁻¹⁰³

And many children who "successfully" outgrow food allergies develop respiratory allergies. A study of 322 children showed that only six per cent still experienced food sensitivity after five years, but 40 per cent of those children "grew into" respiratory allergies. This was true for milk, egg, chocolate, soy and cereals, in that order.¹⁰⁴ Yet this study is often cited as proof that most children "successfully" outgrow their allergies.

Children are more likely to outgrow allergies to cow's milk or soy than allergies to peanuts, fish or shrimp, but will continue to react to them if they eat these foods often enough. And treatment of these allergies requires total exclusion of the offending food.

Soy-induced enterocolitis, for example, will resolve after six months to two years of strictly avoiding soy.¹⁰⁵ As families of allergic youngsters know, keeping soy off the dinner table and out of the meals and snacks provided at daycare centres and schools can be challenging. Even in non-vegetarian families, soy is ubiquitous in the processed food supply. As a result, sensitisation to soy has increased, is not necessarily outgrown, and can either re-emerge or develop later in life.

FRANKENSOY'S MONSTER

Soy allergies may also be on the rise because of genetically modified (GM) soybeans. The York Nutritional Laboratories in the UK, one of Europe's leading laboratories specialising in food sensitivity, found a 50 per cent increase in soy allergies in 1998, the very year in which genetically engineered beans were introduced to the world market. York's researchers noted that one of the 16 proteins in soybeans most likely to cause allergic reactions was found in concentrations higher by 30 per cent or more in Monsanto's GM soybeans. The York researchers sent their findings to British Health Secretary Frank

Dobson, urging the government to act on the information and impose an instant ban on GM food, pending further safety tests being conducted. Dr Michael Antonion, a molecular pathologist at Guy's Hospital in central London, observed: "This is a very interesting if slightly worrying development. It points to the fact that far more work is needed to assess their safety. At the moment, no allergy tests are carried out before GM foods are marketed and that also needs to be looked at."^{106, 107}

People allergic to GM soybeans may not even be allergic to soy. The culprit can be foreign proteins introduced into the soybean. People allergic to Brazil nuts but not to soy have shown allergies to GM soybeans in which Brazil nut proteins were inserted to increase the level of methionine and improve the overall amino acid profile of soy.¹⁰⁸

Scientists say that such problems can be prevented by doing IgE-binding studies, by accounting for physicochemical characteristics of proteins and referring to known allergen databases. That might have identified the Brazil nut problem, but there is no way to assess the risk of *de novo* sensitisation, which happens when experiments generate new allergens.¹⁰⁹ ∞

READER'S SURVIVAL GUIDE:

KICKING SOY OUT OF YOUR LIFE

Those who are allergic to soy must exclude all soy from their diets. This can be a challenge. Soy lurks in nearly everything these days, even in products where we would not reasonably expect it. In the USA, it's in Bumblebee canned tuna, Chef Boyardee Ravioli, Hershey's chocolate, many of the Baskin Robbins 31 flavours, McDonalds and other fast-food burgers, some Pizza Hut pizzas, many luncheon meats, most breads, muffins, doughnuts, lemonade mixes, hot chocolate, some baby foods, and tens of thousands of other popular products.

If you absolutely must keep soy out of your life or that of your children, memorise the following:

Continued on page 79

Soy allergies may also be on the rise because of genetically modified (GM) soybeans.

The Hidden Dangers of Soy Allergens

Continued from page 30

- **Soy goes by many aliases.** Food processors are less likely to list the three-letter word "soy" than a technical term such as "textured vegetable protein (TVP)", "textured plant protein", "hydrolysed vegetable protein (HVP)", "vegetable protein concentrate", "vegetable oil" or "MSG (monosodium glutamate)". Ingredient lists also include words such as "lecithin", "vegetable oil", "vegetable broth", "bouillon", "natural flavour" or "mono-diglyceride" that do not necessarily, but are likely to, come from soy.

- **Food labels and ingredient lists change.** Check them every single time. Manufacturers can switch the ingredients used in food products without warning. Allergic consumers need to check the labels every time they make a purchase and ask about ingredients every time they eat at a restaurant or purchase food at a deli. To make things easier, many allergic people carry cards listing foods on their "no" lists.

- **Products may be mislabelled or contain undeclared soy.** The only solution here is to hope and pray, and make your own food from scratch using known ingredients.

- **Cross-contamination occurs.** Improperly cleaned pans, plates, utensils and cutting boards at restaurant or delis, bins at health food stores or vats at the factory can contaminate food with traces of soy. All it takes is a bit of old soy oil or soy protein residue to trigger severe reactions in people who are highly susceptible.

- **Soy may be in the package as well as its contents.** Soy protein isolate used in the manufacture of paperboard boxes can flake off and migrate into food. In the future, some foods may be shrink-wrapped in an edible soy-based plastic.

- **Soy can be breathed in as well as eaten.** Expect soy dust in some bakeries and shipyards, and in the bulk bin aisle of your health food store.

- **Soy may be in your pills.** Vitamins, over-the-counter drugs and prescriptions may contain an unwanted dose of soy. Beware of pills with soy oil bases, vitamin E derived from soy oil, and soy components such as isoflavones. The inhaler Atrovent is just one of many pharmaceutical products containing unexpected soy.

- **Soy is the latest thing in just about everything.** Soy inks, paints, plastics, carpets, mattresses, cars, etc. are just a few of

the industrial products that may be green for the environment but deadly for highly allergic persons.

- **Kiss with care.** Finally, someone who is exquisitely sensitive to soy could die from contact with the lips of someone who has just eaten soy. Unlikely as this might seem, it has happened with peanuts, soy's even more allergenic relative. ∞

About the Author:

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Editor's Note:

Due to space constraints, we are unable to publish the endnotes for this article. Interested readers can see them at our website, <http://www.nexusmagazine.com>, or request a copy of them from any NEXUS Office.

THE MYSTERIOUS ORIGINS OF OIL

***As suggested by
Prof. Thomas Gold,
crude oil is not the
result of decayed
organic life but is
created by
hydrogenation
processes, as
evidenced by
helium isotopes,
deep within the
Earth.***

by Siegfried E. Tischler, PhD

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THE LIFE CYCLE OF GAIA

Thirty years ago, the newly discovered concept of plate tectonics¹ offered a self-contained and rational explanation of the evolution of the Earth. Within this model it is axiomatic that the Earth of "now" represents the "cooled-down" remnants of a formerly molten blob of cosmic matter that segregated into a nickel-iron core, a ferrous-metal-siliceous mantle and an alkali-metal-siliceous crust.

That kind of thinking had developed over the 19th and 20th centuries—the time when Darwinism had turned the living world into something that was always progressing towards optimisation in form and function. Nothing that "is" could ever be ideal, as it is "on its way" to perfection.² Also inherent in this understanding was that the inanimate parts of the world were *evolving*.³

What wide-eyed students never really catch onto is the fact that, at best, the top 0.05% of the "thickness" of the inanimate world can be seen; the other 99.05% (if not more) is permanently the realm of more or less educated guesswork. With that, geoscience is surely the most esoteric of all "hard" sciences, and vast doses of "belief" (in theories) on the one hand and "cognitive dissonance"⁴ (to be able to disregard factual data) on the other are required for a geoscientist to "function".

Within the model of plate tectonics, the lighter continental (crustal) plates "raft" on the heavier oceanic (crustal) plates. The new science of palaeomagnetism showed in the 1960s that the rocks which make up the floor of oceans are magnetised in accordance with the magnetic field of the Earth prevailing at the time the rocks were formed. A symmetrical pattern of opposed magnetic polarisation exists on both sides, away from mid-oceanic ridges. This proved two things: (a) the Earth's magnetic field undergoes periodic polar reversals, and (b) the Earth was not "created" at any one time but it is still "forming". Iceland "sits" on the Mid-Atlantic Ridge and is living proof of the *constant creation* of new oceanic crustal material by way of volcanic eruptions. New crust (chiefly formed in the Atlantic Ocean) is dipping under the lighter continental plates to get "consumed" in what is called the asthenosphere.⁵ The circum-Pacific "Ring of Fire" fits neatly into this "metabolic" (circular) model by effecting *compensational destruction*.

The "motor" for all this activity is, according to the basic tenets of plate tectonics, the thermal "activity" of the inner parts of the Earth (driven by radioactive decay). "Hot spots" "wander" around, leaving submarine volcanoes in the world's oceans that generate volcanic islands.

Ever since the 1970s, when British atmospheric scientist and inventor Jim Lovelock began urging a more holistic approach to Earth sciences, scientists have been considering the interactions of the different spheres of Gaia (the "living Earth", named after the Earth Goddess of ancient Greece).

The Earth is manifestly differentiating: what comes up in the volcanoes does get incorporated into the lithosphere, atmosphere, hydrosphere and—not to forget—the biosphere. What is dragged back into the asthenosphere in subduction zones is a quite different mix of elements; the remainder is being incorporated in the continents along the mountain belts which form behind the subduction zones where the excess oceanic crust is being dragged back into the mantle.

One of the most important elements in the life cycle of Gaia is carbon. Carbon has three naturally occurring isotopes. Carbon-12 constitutes 98.89 per cent of all carbon atoms and serves as the standard for the atomic mass scale. Carbon-13 is the only magnetic isotope, which makes it very important for structural studies of compounds containing carbon.

Carbon-14 is produced by cosmic ray bombardment of nitrogen in the upper atmosphere; it is radioactive, with a half-life of 5,760 years. The amount of carbon-14 remaining in historical artefacts can be used to estimate their age.

The textbooks which deal with the composition of the Earth grapple with a most fundamental problem: there is a serious deficit of carbon⁶ involved in the "metabolism" of the Earth. The carbon which "comes up" is only *partially* reabsorbed into the bowels of the Earth. Part of it gets absorbed into the skeletons of organisms as calcium carbonate (limestone, mostly in the form of coral reefs; to a lesser amount as debris of exoskeletons, termed *lumachelles*) and the biomass, which is largely made up of carbon. *Volumetrically there is no balance!*

What is even more detrimental to our understanding of the carbon cycle is the fact that colossal amounts of carbon—in the form of methane gas, CH₄—are escaping from the Earth, if not largely unnoticed then undocumented.

Thomas Gold (see endnote 14) describes how earthquakes are preceded and accompanied by massive outbursts of methane (cause of the fires that are commonly associated with tremors; animals get restless or agitated before earthquakes, arguably because they can sense methane escaping).

In the presence of methane, water freezes at 7° Centigrade above zero. As water is densest (most heavy) at +4° C, there is a zone near every ocean bottom where the methane which escapes the Earth into the oceans (that make up 70 per cent of the Earth's surface) is collected as methane ice.⁷

The estimated amounts of methane ice are such that, piled up on the area of Austria, they would reach up some 11,600 kilometres (or some two per cent of the distance to the Moon). This does not include the vast amounts of methane ice which are trapped in the permafrost regions of the globe.

These vast amounts of carbon do not enter any carbon-balance estimates (on either side of the equation), so why take them seriously?

According to the accepted theory of oil formation, organic matter living in the oceans sinks to the bottom and then decays there (under anoxic/euxinic conditions) to form crude oil. While this *might* be happening to some extent in the Black Sea (which to all extents and purposes is closed off from the world's oceans by the Dardanelles and is the "type region" for euxinic environments), there is *no present-day example* of this happening anywhere on the surface of the Earth. This contradicts the geoscientific principle of "actualism" which says that "the present is the key to the past".

ELEMENT-BUILDING IN THE SOLAR SYSTEM

We have had no reason to believe in any other "theory" (we should better say "hypothesis", as *a theory requires empirical proof of an hypothesis*) other than "consensus logics", which has elevated the paradigm of oil formation to the same ludicrous, all-encompassing status that the evolutionary principle has attained

by simple rote learning and repetition of a canon, selected by the learned elders of the religion of "progress".

What we call "crude oil" is a complex mix of compounds of basically hydrogen and carbon; all other chemical elements present are, in terms of *volume*, of no real significance. The complex hydrocarbon chains are fragile constructs and are stable only under conditions resembling those that all life (as we have come to know it) can tolerate. This places a set of physico-chemical conditions on the presence of hydrocarbons which are the realm of organic chemistry, the chemistry of carbon compounds.

One would have thought that hydrocarbons (being man's best friend; after all, they let men drive macho hot-rods and cruise around in "blues mobiles") and the other form of carbon, diamonds (being a girl's best friend), would make carbon compounds the best-known *anything* in existence.

It came as a big surprise to everyone—especially organic chemists—when the "buckyball" (the C₆₀ molecule; correct name, Buckminsterfullerene), a hitherto unknown crystalline form of carbon, was discovered in 1985 by Rick Smalley (Shell Chemical Company, USA) and Harold Kroto (microwave spectroscopist, University of Sussex, England).⁸ Neither Smalley nor Kroto was a mineralogist; both of them were from "outside" the field. *This is of particular relevance in the present context.*

In 1953, British astronomer/cosmologist Fred Hoyle provided a theory⁹ to explain why the solar process cannot produce some 30 per cent of the known chemical elements (as is indicated by spectrographic investigations of the Sun). Cosmic hydrogen clouds (each atom consisting of one proton, neutron and electron) aggregate until, due to gravitational pressures, temperatures in the interior reach about five million degrees and protons are moving with enough energy to fuse on colliding and form deuterons. Deuterons (cores of hydrogen-2) in turn combine with protons to form helium-3. This is

the helium isotope, with three protons and three neutrons in its core.

Helium-3 does not interact with protons, but laboratory experiments have shown that two helium-3 nuclei can fuse and produce helium-4 (the helium isotope with four neutrons in its core), ejecting the two surplus protons. The net result of this proton-proton chain is the conversion of four atoms of hydrogen into one atom of helium; what in effect happens is that neutrons are "captured". The process of element "building" by way of neutron capture reaches iron (atomic number 56), the most stable of all elements, and then the solar process stops for lack of energy.

Astral bodies akin to our Sun go through several stages, the last of which is the supernova. This is when a sun runs out of hydrogen fuel and gravitationally collapses. This implosion yet again raises temperatures and pressures until they transgress a threshold¹⁰ where the accumulated energy leads to explosive release. In this process (during which far greater energies are involved than in the solar process), all the other naturally occurring chemical elements are produced and the cycle of stellar history begins

According to the accepted theory of oil formation, organic matter living in the oceans sinks to the bottom and then decays there (under anoxic/euxinic conditions) to form crude oil.

anew. The results of supernova explosions form a cloud which attains angular momentum.

In a way already described by Kant and Laplace some 200 years ago, planets form by accretion of matter. The results of the supernova explosion will get separated in accordance with their mass as they are propelled away for distances in accordance with their mass. The inner planets will be small "stony" (heavy) bodies, while with distance they become bigger but are made up of ever lighter materials—the "gas giants" in the outer reaches of the solar system.¹¹

As our solar system contains all the known naturally occurring chemical elements, it has evidently gone through a supernova stage and is hence a second-generation cosmic formation.

That is about as far as our factual knowledge of the cosmic history of the solar system goes.

HELIUM IN EARTHLY MATTER

Sir Fred Hoyle and Chandra Wickramasinghe showed by way of spectroscopy that a major portion of all matter in the Universe is of *organic* nature.¹² In light of this, Professor Thomas Gold of Cornell University argued that a similar proportion of the matter which later aggregated to form our planet must have been of organic nature as well! One of his crucial arguments relates to the *isotopic composition of helium in earthly matter*.

Although helium occurs in the Earth's atmosphere only to the extent of one part in 200,000 (0.0005 per cent), and small amounts occur in radioactive minerals, meteoric iron and mineral springs, great volumes of helium are found as a component (up to 7.6 per cent) in natural gas (methane, CH₄).

The common helium isotope, helium-4 (4He), "probably comes from radioactive alpha emitters in rocks" (*Encarta® Encyclopaedia*, 2002). *Encyclopaedia Britannica* (in its online edition) is slightly less cryptic on the origin of helium: "The helium that is present on Earth is not a primordial component of the Earth but has been generated by radioactive decay. Alpha particles, ejected from the nuclei of heavier radioactive substances, are nuclei of the isotope helium-4".

Radioactive alpha radiation is hence not an electromagnetic phenomenon but consists of particle beams! "Know-it-all" science "decreed" in 1959 that "Alpha particles are of little significance because the outer layers of the skin prevent these radiations from penetrating into the body" (*Encarta Encyclopaedia*, 2002), so nobody has unduly worried about this ever since.

On planet Earth at sea level, helium occurs in the atmosphere as 5.4 parts per million of total air. The proportion increases slightly at higher altitudes. About one in 700,000 parts of atmospheric helium consists of helium isotope 3 (3He), now thought to be a product of the decay of tritium,¹³ a radioactive hydrogen isotope of mass 3. Most atmospheric helium is isotope 4 (4He). When organisms breathe in air, they take in this isotopic mix of 3He and 4He; when organisms die, their remains contain that mix of helium isotopes.

The year 1987 saw one of the most significant advances of meaningful cosmology (which was based on fact, rather than the usual fancy) when Thomas Gold, the inventor of radioastronomy, applied to our "little blue-green planet" the results of his decade-long quest to unravel the mysteries of space.¹⁴ He advanced the concept of the "deep, hot biosphere".¹⁵

Implicit in this model for the formation and evolution of the Earth is that the Earth was never a molten, homogeneous cosmic body which then segregated into different spheres according to density and/or the crystallisation temperatures of minerals during the "cooling" of the body. Gold argues that what we call the

"geological evolution" of the Earth is not a function of the cooling of the formerly molten astral body, but rather a function of the ongoing equilibration of what initially may well have been a cosmic refuse dump. Gravitational accretion, aided by asteroid impacts, is held responsible for the thermal processes indicated by the geological record.

THE REAL ORIGIN OF CRUDE OIL

The conventional wisdom was established over the 19th century and is based primarily on geophysical data, i.e., the refraction of shock waves caused by earthquakes (and, of late, also the tremors caused by man-made explosions) on discontinuities of materials of different density within the bowels of the Earth. All this evidence is of an indirect nature and is in the main a "truth" that has emerged from the consensus of generations of scientists who have added innumerable props to an age-old, inductively derived "thought model", where wish was the father of ideas.

Whatever solid evidence there really is, is denigrated and not considered (as it is outside the "paradigm"). When Thomas Samuel Kuhn wrote *The Structure of Scientific Revolutions*,¹⁶ he probably wanted to write a diagnosis. Some are left to wonder as to why it is now administered as therapy.

Thomas Gold showed that when we think of the biosphere, we tend to do so in terms of what we can see, not even considering the possibility that what we know to be the Earth may be "alive" as well.¹⁷ His concept of the deep, hot biosphere holds that what we usually consider the biosphere may not even be half of all the life on Earth!

Drill holes going down to a depth of some 5,000 metres into the crystalline core of the Scandinavian Shield within the (asteroid) impact structure at Siljan in Sweden, and into a similar environment in Canada, **yielded both crude oil and viable bacteria** from that depth! The rocks, either of igneous provenance or in a highly



metamorphosed state, during their formation would have destroyed any organic materials with which we are familiar. ***If "oil" were formed in the decay of surface organisms, how would it ever get down into the regions where it can be found now?***

In his earlier book, *The Millennium of Methane* (see footnote 14), Gold presented data on the isotopic composition of the helium content of the methane (natural gas) which accompanies crude oil. Were this oil derived from the remains of "normal" organisms that live in what we usually consider the biosphere, then the helium present in trace amounts *should* have the isotope mix of $3\text{He}/4\text{He}$ that occurs in the atmosphere—not the 4He which is observed to emanate from the inner parts of the Earth in rift zones and from volcanoes and other environments that are linked to the deeper parts of the Earth. Gold provides a wealth of analytical data to show that ***helium associated with crude oil (via the associated methane) has an isotopic composition commensurable with a "deep" origin!***

The physical impossibility of any "normal" life existing at the pressures and temperatures prevailing at a depth of five kilometres and the trace amounts of isotopic helium occurring with the methane associated with crude oil are conveniently not considered when the "going paradigm" of oil formation is discussed. The bacteria living *within* the Earth derive energy from *reductive* processes (of methane and to a lesser extent of sulphates) rather than from oxidative processes, like all other "normal" life *upon* Earth.

"Extremophile" life is found everywhere that researchers care to look—in nuclear reactors, volcanic vents, deep-sea grabens, even in space!¹⁸ This is not a "modern" phenomenon. Paul Rincon (BBC News Online, 22 April 2004) reported that researchers have found evidence for early life on Earth having thrived in submarine lava flows. Microbes broke down volcanic glasses in pursuit of sustenance in "pillow lavas" of the Barberton Mountainland in southern Africa as long ago as 3.5 billion years. By metabolising these materials, they left behind tubular structures within which are traces of organic carbon. Modern such structures also contain nucleic acids and increased traces of carbon and nitrogen—the key elements of life.

The textbooks on the genesis of crude oil¹⁹ all regurgitate the "story" that had seemed to make sense when "Colonel" Drake drilled a hole near Titusville in Pennsylvania in the fateful year of 1859.²⁰ His brief had been to prospect for salt—but he discovered oil! There being coal seams in the general area led to an immediate knee-jerk reaction of know-it-all science: the oil *had* to be a segregation from the coal, which because of its content of fossilised wood *had* to derive from plant matter.

In the more than 150 years since, there has been not a single experiment that has succeeded in "creating" oil from plant (or animal) matter!²¹ Despite this, institutionalised geoscience keeps telling its students that oil is "fossil fuel" and has derived from the remains of organic matter.

Chemists have long since known how to synthesise more

complex hydrocarbon molecules. Hydrogenation is a reaction that combines hydrogen with unsaturated organic compounds (hydrocarbons). Unsaturated organic compounds have at least one pair of carbon atoms connected by a double or triple bond. When an unsaturated compound is treated with hydrogen at a suitable temperature and in the presence of a catalyst (some substance which has to be present during a chemical reaction without being materially involved in it, such as finely divided nickel, platinum or palladium), the multiple bond between the carbon atoms is broken and a hydrogen atom attaches itself to each carbon atom. For example, when ethylene (C_2H_4) is hydrogenated, the product is ethane (C_2H_6).

Hydrogenation is also used with more complicated molecules, yielding a great variety of synthetic products that are important in the laboratory and for industry.

The Bergius process—named after the German chemist Friedrich Karl Rudolph Bergius (1884–1949; Nobel Prize winner in 1931)—is used on a large scale in many parts of the world where petroleum resources are low. It utilises coal and coal tar as a starting material. The coal, mixed with a heavy oil, is ground to a fine paste and heated with hydrogen, under pressure, in the presence of a catalyst composed of metallic sulphides. The resulting oil is further hydrogenated, and a third hydrogenation yields gasoline. One tonne of coal yields about 304 litres (about 80 gallons) of gasoline.

The Fischer–Tropsch process (named after its developers, the German chemists Franz Fischer and Hans Tropsch) was used extensively in Germany in the 1930s to produce synthetic petroleum and diesel fuel. It uses a mixture of carbon monoxide and hydrogen gases with a catalyst containing nickel, cobalt or modified iron.

Hydrogenation processes of some sort, operating within the bowels of the Earth, seem to be a far more likely mode of formation of crude oil than what the apostles of the religion of "fossil fuel" are sermonising us with.

This would explain why there is oil found in places such as:

- the Californian coast, which is overlying a subduction zone (where the Pacific oceanic crust dips under the North American continent) and is in close proximity to the San Andreas fault zone, one of the most mobile regions of the Earth's crust (this might not be a "despite", but a "because" type of relation);
- the Bight of Biafra, where the African continent is fractured eastwards as is evidenced by geomorphology;
- on the other side of the Atlantic, off the Brazilian coast, where oil-producing wells drilled in some of the deepest water to date make a complete mockery of the "going paradigm" as well;
- the Muglad Basin in Somalia, which is rather close to the East African graben, along which the eastern parts of Africa are separating from the rest of the continent;
- the Highlands of Papua New Guinea, a still-active orogen (region of mountain building);
- the North Sea, where an impact structure dubbed "Silverpit"²², dated at roughly the same age as the Chicxulub impact structure

Hydrogenation processes of some sort, operating within the bowels of the Earth, seem to be a far more likely mode of formation of crude oil than what the apostles of the religion of "fossil fuel" are sermonising us with.

off the Yucatán Peninsula, Mexico, i.e., 65 million years old, is in close proximity to an oil-producing region;

- the Indonesian Archipelago, which is one of the most mobile zones of the Earth; oil is produced in many parts.

None of the above-listed regions has significant sedimentary formations which could act as "source rocks" or even "host rocks". What they *do* have in common is the fact that they are highly mobile parts of the Earth's crust or are close to structures which penetrate deep into the inner parts of the globe.

It would seem reasonable to assume that these structures provide for channelways along which **oil, which is forming constantly in the equilibration of the inner parts of the Earth**, escapes to the surface. The "connection" of crude oil with life, it seems reasonable to argue in this light, is entirely different from what is currently assumed: **oil does not form from life, but the hydrocarbons from the inner parts of the globe support life in the deep, hot biosphere!**

BETWEEN A ROCK AND A HARD PLACE

As a "hard-rock" exploration geologist for over a quarter of a century, the author has worked on five continents and has had innumerable opportunities to discuss the matter with oil geologists over distilled hydrocarbons. Most of these discussions ended in shouting matches and *ad hominem* attacks. Not one of the above-cited arguments has ever been considered as relevant to the matter under discussion. This is reminiscent of the line which the Pope followed when it came to "the Passion of the Christ": "It was as it was"!

The presently *en vogue* paradigm of "oil formation" is little more than an apodictic religious dogma. The voicing of any doubt as to its veracity is tantamount to professional suicide for oil industry professionals; ridicule

is dished out to other scientists and distasteful remarks are reserved for all those who have no "special knowledge".

This is reminiscent of the tactics of the Propaganda Minister of the Third Reich, Dr Josef Goebbels, who elevated the working knowledge of bricklayers to an art form: "The harder you throw the plaster, the better it will stick!" As regards the paradigm of oil formation this then reads: "The bolder the lie, the more credible it is!"

German philosopher Professor Jürgen Habermas demands all participants in intellectual discourse to possess "participant knowledge".²³ In doing so, he deprives the majority of mankind of one of its most fundamental rights: to have a say in existentially important matters. When Thomas Kuhn (cf. endnote 15) "installed" the concept of *paradigms* by way of a "macro" (a materialised algorithm) into the software of modern thinking, he effectively did for academia what Habermas did for mankind in general: issue everybody with a "gag order"!

In this way, academia is dumbed down, just like the general public is said to be too stupid to possibly be able to understand "science". By telling everybody to mind their own business, academia is just as brutally divided into mental cages as mankind in general. This also flies in the face of the democratic principles. Academic specialists (the ones "in the know") advise elected officials on policy. In effect, many existentially fundamental matters are decided totally undemocratically.²⁴

Real scientists use terminology in order to define precisely the more fickle aspects of their work, while the "cash and carry" scientific enterprise of modern times uses terminology to exclude unwanted outsiders who could possibly upset the paradigms. Peer review of academic publications used to be self-censoring to exclude methodologically unsound research from the literature. Of late it ensures that the paradigms are adhered to, and this introduces an entirely different kind of censorship. The consensus of the learned elders of whatever scientific discipline regarding the permitted results of research stifles the progress of science. A case in point: rapid progress "happens" in fields like information technology or genetic engineering—disciplines so new that they have neither a paradigm nor ethical guidelines to keep them sliding from bottomless immorality into criminality.

THE END OF OIL?

At this point, this essay comes full circle. By calling oil "fossil fuel", a "macro" is working on the cognitive faculties of people who are "empowered" by the combustion of hydrocarbons. Anything "fossil" is by definition *finite*, and when the oil industry continues to presage "the End of Oil" it surreptitiously massages

the mind of the "power-hungry" person on the street. The closer the "finite" resource of "fossil fuel" gets to its predicted "end", the easier it is to justify a turning of the price spiral. In this way, the individual is tricked into unquestioningly accepting any price at the pump, while entire nations see nothing wrong in simply going on the warpath to ensure they remain "powerful".

The history of the 20th century could be rewritten in terms of all the wars having been simply the means to the end of getting at the quantities of oil required to keep "development" of the world going at the most

profitable pace. My article titled "Big Oil and the War on Drugs and Terrorism" [NEXUS, vol. 11, no. 4] outlined an alternative way of stringing together the military conflicts of the last century.

While the high and mighty were simply ordering their subjects into World War I, the Second World War was the result of mass hysteria and brutal manipulation. After the first round of wholesale mass slaughter, the world said "Never again!", but 20 years later the "Fuehrers" of mankind proved to have the historical memory capacity of the common fruit fly. As "effective" as the League of Nations was after World War I in assuring that there would be no next global war, the United Nations organisation formed at the end of World War II was similarly useless. What it achieved in effect was that the founders of both these institutions were able to retain their economy on a war footing continuously by "regulating" the arms (usage) industry.

When entire nations get herded into the boxcars of trains heading for oblivion in modern times, as always there is "sound scientific evidence" produced to justify even the most outrageous actions. In 1956, Shell geologist M. King Hubbert predicted (correctly as it turned out) that *US oil production* would peak in the early 1970s and then begin to decline. Was the political reality a coincidence? The 1973 war over Palestine let the oil price climb into the lofty regions that made the exploitation of the recently discovered vast oil reserves in the North Sea a viable proposition.

K. S. Deffeyes did similar work to that of Hubbert on *global oil*

The presently *en vogue* paradigm of "oil formation" is little more than an apodictic religious dogma. The voicing of any doubt as to its veracity is tantamount to professional suicide for oil industry professionals...

production, predicting it to "peak" between 2004 and 2008.²⁵

It seems hard to dismiss a connection between American geopolitical posturing (and unilateral action) and this kind of thinking.

This time around, it is the oil reserves of the Argentina–Falklands Shelf, discovered in the late 1970s (which were the reason for the Falklands War), which require an oil price hike of vast proportions to justify the gigantic investments to put this resource (rumoured to be 10 times the size of that of Saudi Arabia) into production.

DEPLETED URANIUM AND THE IRAQI OILFIELDS

Only lateral thinkers will ever grasp the probable reason for turning Iraq into a nuclear waste dump. When the truth about the effects of using depleted uranium²⁶ (DU) ammunition hits home, the second-largest (commonly known) oil reserves of the globe will remain in the ground.

Nobody will risk having their children born anophthalmic (without eyes) or even without a brain, or with fused fingers or other unspeakable birth defects.

Andy Kershaw reported for the UK *Independent* from Basra, southern Iraq, on 1 December 2001 about the ghastly effects of DU munitions on the health of the local population.

During the Gulf War, the USA and UK pounded the city and its surroundings with 96,000 depleted-uranium shells; soon after, children were born there with grotesque congenital abnormalities.

From 1991 (the end of the Gulf war) until 1994, the Basra Maternity Hospital saw 11 congenital anomalies; in 2000, there were 221 such abnormalities. The hospital treated 15 children with leukaemia in 1993; in 2000, it treated sixty.

A study of the families of 251 Gulf War veterans in Mississippi has revealed that 67 per cent of all children fathered by these soldiers after their tour of duty in Iraq were born without eyes or ears, or even without a brain, and with grotesque congenital abnormalities (Dr Lauren Moret, environmental geologist, *San Francisco Bay View*, 11 July 2001).

These reports have not been quoted by other news media, but have been buried under "more interesting" news.²⁷

According to Larry Johnson, writing in the *Seattle Post-Intelligencer* (4 August 2003): "The Pentagon and the United Nations estimate that the US and Britain used 1,100 to 2,200 tons of armor-piercing shells made of depleted uranium during attacks on Iraq in March and into April 2003—far more than the estimated 375 tons used in the 1991 Gulf War."

When similar reports of the results on public health after the second "gang rape of Iraq" surface from Iraq itself and the nations that have made up the "gang", there will be signs sprouting up at petrol pumps: "We sell only gasoline produced from oil certified as NOT FROM IRAQ".

With that, the vast oil reserves of Iraq will stay in the ground, the resulting price hike will turn the Argentina–Falklands Shelf into a porcupine of oil rigs, and mankind will be waiting for the next chapter in the history of "Big Oil".

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About the Author:

Austrian-born Dr Siegfried E. Tischler received his PhD in Geosciences in 1977 from Leopold-Franz University, Innsbruck. Since then, he has worked on five continents as a geoscientist in academia (with the Austrian Mining University), in government (as Director of Mining in Transkei, a former South African "Homeland" where he established a Geological Survey Department), and in industry (as a mineral exploration management consultant).

In 2001, he took on an assignment as Visiting Professor in the Department of Sociology, University of Graz, Austria, to teach Ethics of Science within the framework of a course dealing with the management of crises and catastrophes, offered to post-graduates within senior positions in government and industry. Since May 2003, he has been a Visiting Professor at the University of Riau, Indonesia, setting up a Centre for Ethics of Science. He has joined PT Multi Nuansa Harmoni as Director Utama in order to market his technologies for the oil service industry and the region, and is presently based on Batam Island, Indonesia.

Dr Tischler is happy to receive and reply to comments emailed to setex01@yahoo.com. For a more detailed biography, visit <http://resumes.yahoo.com/setex01/siegfriedtischler>.

Dr Tischler will be speaking about global oil politics and related subjects at the NEXUS Conference in Brisbane in September 2004.

Endnotes

1. Dewey, J., "Plate Tectonics", *Scientific American* 226:56–68, 1972.
2. This is very much in keeping with monotheistic thinking which turns the human earthly presence into waiting in an ante-room of otherworldly paradisiacal bliss. The administrators of "isms" (religious, political or scientific) make a good living out of the sale of "tickets to ride"...
3. Windley, B.F., *The Evolving Continents*, Wiley & Sons, New York, ISBN 0-471-99475-8, 1977.
4. American psychologist Leon Festinger proposed in 1957 a "theory of cognitive dissonance", according to which emotional homeostasis is established when the perceptions agree with expectations. Whenever contentedness is not possible to achieve in any other way, then perception is "filtered".
- See also Milton, R., *Forbidden Science*, Fourth Estate, London, ISBN 1-85702-302-1, 1994. Google.com finds under "cognitive dissonance" a whole litany of new and newest literature on the Internet. (The concept has again been recognised as relevant!)
5. David Pratt cites multiple examples of evidence from a wide range of geoscientific disciplines to show that "plate tectonics" is far from the all-embracing geodynamic paradigm that it has become over the last quarter of the 20th century, and he advises a more circumspect approach to the subject. See Pratt, D., "Plate Tectonics: A Paradigm Under Threat", *Journal of Scientific Exploration* 14(3):307–352, ISSN 0892-3310/00, 2000.
6. Ehrlich, Paul R., Anna H. Ehrlich and J.P. Holdren, *Ecoscience: Population, Resources, Environment*, Freeman, San Francisco, ISBN 0-7167-0567-2, 1972. This is a curious book: a totally incomprehensible problem is described in everyday language in a way to make it seemingly "go away"...
7. Krenvolden, K.A. and L.A. Barnard, "Hydrates of natural gas in continental margins", in Watkins, J.S. and C.L. Drake (eds), *Studies in Continental Margin Geology*, Amer. Assoc. Petroleum Geol. Memoir 34, 1982, pp. 63–144. That this data was available over 20 years ago

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shows science to be irresponsible and politics to be criminal. For more data, see also: Ellis Evans, J.C. and D. Wynn Williams, "A Great Lake under the Ice", *Nature* 381:644-46, 2000; Stone, R., "Russian outpost readies for other-worldly quest", *Science* 279:658-61, 1998.

8. Aldersey Williams, H., *The Most Beautiful Molecule: The Discovery of the Buckyball*, J. Wiley & Sons, New York, 1995. The name of the mineral honours architect R. Buckminster-Fuller, who popularised geodesic domes.

9. Hoyle, F., *The Nature of the Universe*, Basil Blackwell, Oxford, 1953.

10. This is termed the "Chandrasekhar limit" (or, in the popular vernacular, "event horizon"): any mass greater than 1.4 solar masses will not explode into a supernova, but implode to form an all-consuming "black hole".

11. Interestingly, Uranus orbits the Sun at an oblique angle which does not fit with the "going paradigm" of planet formation. Reuters reported in June 2002 about the discovery of an entity akin to our solar system around 55 Cancri, a star within the constellation Cancer (at some 41 light-years or 410^{12} km distance from Earth) which can be seen with the naked eye. Three "gas giants" orbit 55 Cancri (as in our solar system); in a position analogous to Mars, Earth and Venus, there is a "void" (of factual knowledge?) within which another

Gaia may hide. More about all this can be found at <http://www.jpl.nasa.gov/images/newplanets>.

12. Hoyle, F. and C. Wickramasinghe, *Our Place in the Cosmos: Life did not begin on Earth – it arrived from space and is still arriving*, Phoenix, London, 1993.

13. Tritium ^3H is a radioactive isotope of hydrogen. It has a half-life of 12.43 years and decays by beta emission to helium-3 (^3He). Tritium is produced naturally by the interaction of cosmic rays with nitrogen and oxygen, mainly in the upper atmosphere. Tritium exists in the atmosphere in the form of tritiated water molecules (HTO) and is transferred from the atmosphere to the Earth's surface through vapour exchange and rainfall. The involvement of tritium in the hydrological cycle makes it an excellent transient tracer for tracking water movement in natural water systems. By the late 1950s and early 1960s, large quantities of anthropogenic tritium were delivered to the atmosphere by the thermonuclear weapons tests. This anthropogenic signal completely masked the small quantities of naturally produced tritium. Tritium is used as a tracer in chemical and biochemical research.

14. Gold, Thomas, *Das Jahrtausend des Methans. Die Energie der Zukunft – unerschöpflich, umweltfreundlich* ("The Millennium of Methane – The Energy of the Future: inexhaustible, environmentally

friendly"), ECON, Düsseldorf, 1987.

15. Gold, Thomas, "The Deep, Hot Biosphere", *Proceedings of the National Academy of Science, USA* 89:6045, 1992. It should be mentioned here that in this paper Gold draws attention to the fact that such ideas have been "textbook" wisdom in the USSR for decades. With the takeover of the former Eastern Bloc and especially its oil industry by Western capital, this knowledge has largely "disappeared" from academia in the former Second World. Prof. Igor Hrusecky, Chairman of the Department of Geophysics and Hydrocarbon Potential, University of Bratislava, Slovak Republic, alerted the author to this in February 2001. This kind of thinking is eminently more rational than the "going paradigm" in Western academia; it can be proved experimentally and does not require any *deus ex machina*. That it is not permitted even to be considered as an alternative shows Western (geo-) science as a fraudulent enterprise driven by special interests.

16. Kuhn, T.S., *The Structure of Scientific Revolutions*, University of Chicago Press, Chicago, 1962. By some 20 years later, paradigms had become *the* slogan in science; and it can be shown that they are little more than the effect of academic nihilism which has turned science and art into pure formalisms. "The crustification of thinking along pre-determined schemata, the suffocation of new ways of

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thinking under mountains of alpha-numeric data, the prohibition of creativity by the force of the canon sometimes permit haphazardly outstanding achievements—which mostly, however, just hide the fact that they are based on naught." Kraus, W., *Nihilismus heute oder Die Geduld der Weltgeschichte* ("Nihilism or The Patience of World History"), Fischer Verlag, Frankfurt/Main, ISBN 3-5962-4348-3, 1985, p. 19. Some 50 years earlier, Sergyei Nilus deposited the *Protocols of the Learned Elders of Zion* with the British Museum. They postulate that the Goyim (non-Jews) are not led by the practical use of unbiased historical review, but follow theoretical routines without critical appreciation of consequent results. (Who does not wonder whether T.S. Kuhn had a ghostwriter?)

17. Gold, Thomas, *The Deep, Hot Biosphere*, Copernicus, New York, 1999.

18. Horikoshi, K. and W.D. Grant (eds), *Extremophiles: Microbial Life in Extreme Environments*, Wiley Series in Ecological and Applied Microbiology, Wiley-Liss, ISBN 0-4710-2618-2, 1998.

19. *Ex pluribus unum*: Hyne, N.J., *Geology for Petroleum Exploration, Drilling and Production*, McGraw-Hill, New York, 1984.

20. In that same year, the Red Cross was founded, Wallace and Darwin advanced the

"evolutionary principle" and Russia finally subdued the Ukraine and gained control over the oil-rich region of the Caucasus (and in the process caused the exodus of millions of Askhenazi Jews, which resulted in the "Jewish problem" of Europe).

21. This is not a singularity: in 1952, the Urey–Miller process, where a mix of methane, water vapour and other gases thought to have been prevalent in the primordial atmosphere was subjected to electrical discharges, resulted in deposits of amino acid-like substances. This was considered proof for the "origin of life" on Earth. That not all of the necessary "building blocks of life" were formed in this way made the concept unworkable, and most damning was the fact that all those constructs were dextro-rotary, while all such organic formations are levo-rotary! As this would have utterly destroyed "the story", it was hardly ever reported!

22. In August 2002, Simon Steward (BP, Aberdeen) and Philip Allen (Production Geoscience, Banchory) reported in *Nature* (418:520, 2002) that some 140 kilometres east of the mouth of the Humber River in England lies an impact structure, christened "Silverpit", which was created some 60 to 65 million years ago in the North Sea (simultaneously with the Chicxulub structure off the Yucatán peninsula which is held responsible for the extinction of the dinosaurs).

23. Habermas, J., *Theorie des kommunikativen Handelns* ("Theory of Communicative Action"), Frankfurt/Main, 1981, 2 volumes.

24. The manifest idiocy of genetic engineering would never have come to be if democratic principles had been at work. Would a medical doctor (being cognisant of his Hippocratic oath) ever let a bioengineer loose? Can a mathematician, in the knowledge of Gödel's theorem, ever be sure? This list could be extended *ad infinitum* or *ad absurdum*...

25. Deffeyes, K.S., *Hubbert's Peak: The Impending World Oil Shortage*, Princeton University Press, ISBN 0-6910-9086-6, 2001.

26. Depleted uranium (DU) in armour-piercing ammunition externalises elegantly one of the cost factors of nuclear power generation: natural uranium ore is 96% ²³⁸U; only the meagre rest is the highly radioactive (and fissionable) ²³⁵U. The enrichment leaves the useless ²³⁸U, an alpha-ray emitter with a half-life of some 4.5 billion years, as highly dangerous toxic waste. The high atomic weight renders ²³⁸U ideally suited as tipping for tank-buster weaponry. Tungsten would serve the same purpose, but it is not freely available as waste.

27. That was the *Larry King Live* epoch when DNA was of interest only in terms of blood on fences (from OJS?) or stains on Monica's blue dress (from WJC?).

PRIMARY PERCEPTION AND THE BACKSTER EFFECT

***Cleve Backster's
1966 discovery that
living cells tune into
and respond to their
environment as well
as to emotions and
intentions is still
revolutionising our
understanding of
consciousness and
communication.***

Interview with Cleve Backster

by Derrick Jensen

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backster.html](http://www.derrickjensen.org/backster.html)

Sometimes it happens that a person can name the exact moment when his or her life changed irrevocably. For Cleve Backster, it was early morning on February 2nd, 1966, at 13 minutes 55 seconds of chart time for a polygraph he was administering. One of the world's experts on polygraphs and the creator of the Backster Zone Comparison Test (the standard used by lie detection examiners worldwide), Backster had threatened the subject's well-being in the hope of triggering a response. The subject had responded electrochemically to this threat. The subject was a plant.

Since that time, Cleve Backster has conducted hundreds of experiments showing that plants respond to our emotions and intents, as do severed or crushed leaves, eggs (fertilised or not), yogurt, scrapings from the roof of a person's mouth, sperm and so on. He's found that if he placed oral leukocytes (or white blood cells removed from a person's mouth) into a test tube, the cells would still respond electrochemically to the donor's emotional states, even when the person was out of the room, out of the building or out of the state.

I've wanted to speak to Cleve Backster since I first read about his work when I was a kid. He sparked my imagination, and it is not too much to say that his observations on February 2nd, 1966, changed not only his life but my own. He verified an understanding I had as a child, an understanding that not even a degree in physics could later eradicate: that the world is alive and sentient.

Nonetheless, when I went to talk to him I did not allow my enthusiasm to overwhelm my scepticism. I was excited yet dubious as he placed yogurt into a sterilised test tube. He clamped the tube in place, inserted two sterilised gold electrodes and turned on the recording chart. We began to talk. The pen wriggled up and down, and seemed to lurch just as I took in my breath to disagree with something he said. But I couldn't be sure. When we see something, how do we know if it is real or if we see it only because we wish so much to believe?

Cleve left to take care of business elsewhere in the building. I tried to fabricate anger, thinking of clearcuts and the politicians who legislate them, thinking about abused children and their abusers. The line manifesting the electrochemical response of the yogurt remained perfectly flat. Fabricated emotions either don't count or it's a sham—or something else was terribly wrong. Perhaps the yogurt was not interested in me.

Losing interest myself, I began to wander around the lab. My eyes fell on a calendar, and on closer inspection I saw it was actually an advertisement for UPS. I felt a sudden surge of anger at the ubiquity of advertisements, and then realised, "My god, what was that? A spontaneous emotion!" I dashed to the chart and saw a sudden spike corresponding to the moment I'd seen the calendar. Then more flat line. And more flat line. And more. Again I began to wander through the lab, and again I saw something that triggered an emotion. This was a poster showing a map of the human genome. I thought of the Human Genome Diversity Project, a monumental study hated by many traditional indigenous peoples and their allies for its genocidal implications. Another surge of anger, another dash to the chart and another spike in the graph from instants before I'd started to move. Such are the moments of revolutionary insight.

I spoke with Cleve Backster 31 years and 22 days after his original observation, a full continent away in San Diego from the office on Times Square in New York City where he had once worked and lived.

Derrick Jensen (DJ): I'm sure you've told this story a million times, but can you say again how you first noticed the reaction in a plant?

Cleve Backster (CB): The initial observation that happened on February 2nd, 1966, involved a dracaena cane plant I had back in the lab in Manhattan. I wasn't particularly into plant culture; it's just that there was a going-out-of-business sale at a plant store on the ground floor of the building I was in, and the secretary bought a couple of inexpensive plants for the office. One was a rubber plant and the other was this dracaena cane. I had done a saturation watering of these plants—putting them under the faucet and watering them until water ran through completely—and I was curious as to how long it would take the moisture to get to the top. I was especially interested in the dracaena because the water had to climb a long trunk and then to the end of these long leaves. I thought if I put something that measures resistance at the end of a leaf—the galvanic skin response section of the polygraph, and I had those sitting all over the place because we were running a school—a drop in resistance should be recorded on the paper as the contaminating moisture arrived between the electrodes.

That, at least, is the cover story. I'm not sure if there was another, more profound, reason. It could be that somebody at another level of consciousness was nudging me into doing this. I don't know. But curiosity about watering seems to have worked out as a reasonable explanation of why I did it.

Next, I noticed something on the chart that resembled a human response on a polygraph. In other words, the contour of the pen tracing was not what I would expect from water entering a leaf, but instead what I would expect from a person taking a lie-detector test. Lie detectors work on the principle that when

people perceive a threat to their well-being, they physiologically respond in predictable ways. If you were conducting a polygraph as part of a murder investigation, you might ask a suspect, "Was it you who fired the shot that was fatal to so and so?" If the true answer is yes, the suspect will fear getting caught lying, and electrodes on their skin will pick up the response to that fear.

So I began to think about how I could threaten the well-being of the plant. First I tried putting a neighbouring leaf in a cup of warm coffee. The plant, if anything, showed what I now recognise as boredom: it just kept trending downward. Then, at 13 minutes 55 seconds of chart time, the imagery entered my mind of burning the leaf I was testing. I didn't verbalise, I didn't touch the plant, I didn't touch the equipment. The only new thing that could have been a stimulus for the plant was the mental image. Yet the plant went wild. The pen jumped right off the top of the chart.

I went into the next office to get matches from my secretary's desk and, lighting one, made a few feeble passes at a neighbouring leaf. I realised, though, that I was already seeing such a saturation of reaction that more change wouldn't be noticeable anyway. So I tried a different approach: I removed the threat by taking the matches back to the secretary's desk. The plant calmed right back down.

Immediately I understood something important was going on. There were no alternate explanations. There was no one else in the building, nobody else in the lab suite, and I simply wasn't doing anything that would provide a mechanistic explanation. From that split second, my consciousness hasn't been the same. My whole thought process, my whole priority system, has been devoted to looking into this.

EXPERIMENTS IN ATTUNEMENT

CB: After that first observation, I talked to scientists from different fields, trying to get them to explain to me within their disciplines what was happening. It was totally foreign to them. So I started to design an experiment in greater depth to explore what I soon began to call "primary perception".

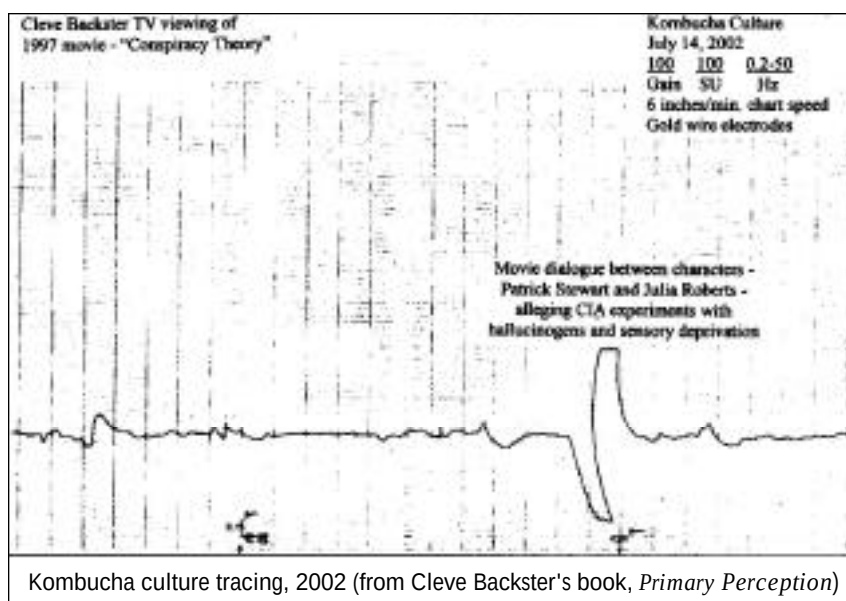
DJ: Primary perception?

CB: I couldn't call what I was witnessing extrasensory perception, because plants don't have most of the first five senses to start with. This perception on the part of the plant seemed to take place at a much more basic, or primary, level. Thus the name.

Anyway, what emerged was an experiment in which I arranged for shrimp to be dropped automatically at random intervals into simmering water, while recording the reaction of plants at the other end of the lab.

DJ: How did you tell whether the plants were responding to the death of the shrimp or to your emotions?

CB: It is very very hard to eliminate the interconnection between the



experimenter and the plants being tested. Even the briefest association with the plants—just a few hours—is enough to let them become attuned to you. Then, even though you automate the experiment and leave the laboratory, and even though you set a time-delay switch for random intervals, guaranteeing you are entirely unaware of when the experiment starts, the plants will remain attuned to you, no matter where you go.

At first, my partner and I used to go to a bar a block away, and after a time we began to grow suspicious that the plants were not responding to the death of the brine shrimp at all, but instead to the rising and falling levels of excitement in our conversations.

Finally, we came up with a way around this. We had someone else buy the plants and store them in another part of the building we didn't frequent. On the day of the experiment we went to the holding area, brought the plants in, hooked them up and left. This meant the plants were in a strange environment, they had the pressure of the electrodes, they had a little trickle of electricity going through their leaves, and they'd been deserted. Because they were not attuned to us or to anyone else, they began "looking around" for anything that would acquaint them with their environment. Then, and only then, did something so subtle as the death of the brine shrimp get picked up by the plants.

DJ: Do plants become attuned over time only to humans, or do they become attuned to others in their environment as well?

CB: I'll answer that with an example. Often I hook up a plant and just go about my business, then observe what makes it respond. One day back in New York City I was making coffee. The coffee maker we had in the lab was a dripolator, where you put a teakettle on, boil the water, pour it in and it drips down. We normally didn't empty the teakettle but just topped it off later. This particular day, however, I needed the teakettle for something else and so I poured the scalding water down the sink. The plant being monitored showed huge reactions. It turns out that if you don't put chemicals or very hot water down the sink for a long time, a little jungle begins to grow down there. Under a microscope it's almost as scary as the bar scene in *Star Wars*. Well, the plant was responding to the death of the microbes.

I've been amazed at the perception capability right down to the bacterial level. One sample of yogurt, for example, will pick up when another is being fed. Sort of like, "That one's getting food. Where's mine?" That happens with a fair degree of repeatability. Or if you take two samples of yogurt, hook one up to electrodes and drop antibiotics in the other, the electroded yogurt shows a huge response at the other's death. And they needn't even be the same kind of bacteria.

The first Siamese cat I ever had would only eat chicken. My partner's wife would cook a bird and send it to the lab. I'd put the carcass in the refrigerator and pull off a piece each day to feed the cat. By the time I'd get to the end, the carcass would be pretty old and the bacteria would have started to build up. One day I had some yogurt hooked up; and as I got the chicken out of the refrigerator to begin pulling off strips of meat, the yogurt responded. Next, I put the chicken under a heat lamp to bring it to room temperature...

DJ: You obviously pamper your cat...

CB: I wouldn't want the cat to have to eat cold chicken! Anyway, heat hitting the bacteria created huge reactions in the yogurt.

DJ: How do you know you weren't influencing this?

CB: At the time, I was going through a phase where I used pip switches constantly. I had them set up all over the lab. Whenever I performed an action, I hit a switch which placed a mark on the remotely located chart. That way I could later compare the reaction of the yogurt, which I was unaware of at the time, to whatever was happening in the lab. Once again, when I turned the chicken over, I got these huge reactions from the yogurt.

DJ: And another when the cat starts to ingest the chicken?

CB: Interestingly enough, bacteria appear to have a defence mechanism such that impending danger causes them to go into a state very similar to shock. In effect, they pass out. Many plants will do this as well. If you hassle them enough they'll go insensitive, almost like a flat line. The bacteria apparently did this, because, as soon as the unfriendly bacteria hit the cat's digestive system, the signal went out. There was a flat line from then on.

DJ: Dr Livingston, of "Dr Livingston, I presume" fame, was mauled by a lion. He later said that during the attack he didn't feel pain, but was instead blissed out. He said it would have been no problem to give himself up to the lion.

CB: I was on an airplane once, and had with me a little battery-powered galvanic response meter that I could hook to electrodes. I had the aisle seat, and I can still remember the poor guy strapped in next to the window. Just as the attendants started serving lunch, I pulled out this meter and said to him, "You want to see something interesting?" I put a piece of lettuce between the electrodes and when people started to eat their salads we got some reactivity, which stopped as the leaves went into shock. Then I said, "Wait until they pick up the trays, and see what happens". When attendants removed our meals, the lettuce got back its reactivity. The point is that the lettuce was going into a protective state so it would not suffer. When the danger left, the reactivity came back. This ceasing of electrical energy at the cellular level ties in, I believe, to the state of shock that people, too, enter in extreme trauma.

DJ: Plants, bacteria, lettuce leaves...

CB: Eggs. I had a Doberman Pinscher for a while, back in New York, and I used to feed him an egg a day. One day I had a plant hooked up to a large meter ordinarily used to display galvanic skin response. This means that instead of churning out miles of chart paper, which can get pretty expensive, I could see on the meter any large change in reactivity. This particular time I was feeding the dog, and as I cracked the egg the meter went crazy. I thought, "What's the connection between cracking an egg, and the plant in the other room getting all whippy?" That started hundreds of hours of monitoring eggs. Fertilised or unfertilised, it doesn't matter; it's still a living cell, and plants perceive when that continuity is broken. Eggs, too, have the same defence mechanism. If you threaten them, their tracing will go flat on you. Then, if you wait about 20 minutes, they come back.

RESULTS WITH HUMAN CELLS

CB: After working with plants, bacteria and eggs, I started to wonder how animals would react. Of course, you can't hold your cat or dog still for long enough to do meaningful monitoring. So I used scrapings from the roof of a person's mouth. But I was only able to get short-term readings, nothing long enough to draw conclusions. I thought then that I'd try sperm, which would be the ideal single human cell, capable of staying alive outside the body and certainly easy enough to obtain.

In this observation, the sample from the donor was put into a test tube with electrodes, and the donor was separated from the sperm by several rooms. Then the donor inhaled amyl nitrate—you know, poppers, that young people talk about—which when used conventionally is supposed to dilate vessels and stop people from having strokes. Just crushing the amyl nitrate caused a big reaction in the sperm—and when the donor inhaled, the sperm went wild.

So here I am, seeing single-cell organisms on a human level—that are responding to the donor's sensations, even when they are no longer in the same room as the donor. There was no way, though, that I could continue that research. It would have been scientifically proper, but politically stupid. The dedicated sceptics would undoubtedly have ridiculed me, asking where my masturbatorium is, and so on.

"I couldn't call what I was witnessing extrasensory perception, because plants don't have most of the first five senses to start with.

"This perception on the part of the plant seemed to take place at a much more basic, or primary, level. Thus the name, 'primary perception'."

Then, at a meeting in Houston, I met a dental researcher from the Texas University School of Dentistry who had perfected a method of gathering white cells from donors' mouths. This was great. It was politically feasible, easy to do and required no medical supervision, as would have been necessary with white cell extraction directly from blood.

Once that hurdle was out of the way, I started doing split-screen videotaping of experiments, with the chart readout superimposed at the bottom of a screen showing the donor's activities. We found that a person could be 10 blocks away, or even 20 miles away, and we still got reactions.

DJ: How did you monitor over distance?

CB: We took the white cell samples, then sent the people home to watch television. I would have preselected a program that would elicit an emotional response from them—for example, showing a veteran of Pearl Harbor a documentary of West Pacific enemy aircraft attacks—and then I taped both the program and the response of their cells. What we found was that cells outside the body still react to the emotions you feel, even though you may be miles away.

The greatest distance we've tested has been about 300 miles. Brian O'Leary, who wrote *Exploring Inner and Outer Space*, left his white cells here in San Diego, then flew home to Phoenix. On the way, he kept careful track of different things that aggravated him, carefully logging the time of each. The correlation remained over distance.

DJ: The implications of all this...

CB: Yes, are staggering. We get two different kinds of bacteria very much in sync with each other. We get plants responding to our intent. We get plants responding to the death of other creatures. All my work, which consists of file drawers full of this kind of very high quality anecdotal data, has shown time and again that these creatures—bacteria, plants and so on—are all fantastically tuned in to each other.

Now, as you get to humans, this capability gets lost. In one observation after my lecture at Yale University, graduate students monitored a plant and simultaneously hassled a spider, put their hands around it and stopped it from running away. When they moved their hands away, they saw a reaction in the leaf being monitored the instant before it ran, apparently right as it was making the decision. That's a type of high-quality observation I have seen repeatedly.

And human cells, too, have this primary perception capability, but somehow it gets lost; somehow with humans it doesn't surface at the conscious level. It makes you wonder if we have lost that capability, or if we ever had such a talent.

I've come to the conclusion that when a person has evolved spiritually enough to handle these other perceptions, she or he will become properly tuned in. Until then, it may be best *not* to be tuned in because of the damage we cause by mishandling the information received.

Sometimes we have a tendency to see ourselves as the most highly evolved life-form on the planet. We're very successful at intellectual endeavours. But these may not be the ultimate scales by which to judge. It could be that there are others who are more

advanced spiritually. It also could be that we are approaching a place where we may be able to safely enhance our perception. I think more and more people are openly working in these so far marginalised areas of research.

For instance, have you heard of Rupert Sheldrake's work with dogs? He puts a time-oriented camera on both the dog at home and the associated human at work. He has discovered that even for people who come home from work at a different time each day, at the moment the person leaves work the dog at home heads for the door.

REACTIONS FROM MAINSTREAM SCIENTISTS

DJ: How has the scientific community received your work?

CB: With the exception of scientists at the margins, like Rupert Sheldrake, it was met first with derision, then hostility, and mostly now with silence.

At first they called primary perception "the Backster effect", perhaps hoping they could ridicule the observations away by naming them after this wild man who claims to see things that have been missed by mainstream science. The name stuck—and because primary perception can't be readily dismissed, it is no longer a term of contempt.

At the same time the scientists were ridiculing my work, the popular press was paying very close attention to me, with dozens of articles and portions of books, such as *The Secret Life of Plants*. I never asked for any of the articles to be done, and I have never profited from this work. People have always come to me, requesting additional information.

Anyway, the botanical community was getting pretty upset. They wanted to get to the bottom of all this "plant nonsense", so at the 1975 American Association for the Advancement of Science meeting in New York City they planned to resolve the issue. Arthur Galston, of Yale University, a well-known botanist, got together a select group of scientists to try, in my opinion, to neutralise the work. This is a typical response by the scientific community, to

"compare notes" regarding controversial theories. The year before in Chicago, they focused on Immanuel Velikovsky, who wrote *Worlds in Collision*. I had already learned that you don't go into these things to win; you go in to survive. And I was able to do that.

They've now got to the point where they can't counter the research I'm doing, and so their strategy has been to just ignore me, hoping I'll go away. Of course, that's not working, either.

DJ: What is their main criticism?

CB: The big problem, and this is a big problem as far as consciousness research in general is concerned, is repeatability. The events I've seen must be spontaneous. If you've thought them out in advance, you've already changed them. It all boils down to a very simple thing: repeatability and spontaneity do not go together, and as long as members of the scientific community overemphasise that aspect of scientific methodology, they're not going to get very far in consciousness research. I am sure of that. That is precisely what has held it back for years.

"We took the white cell samples, then sent the people home to watch television..."

"What we found was that cells outside the body still react to the emotions you feel, even though you may be miles away."

As related to my initial observation in 1966, not only is spontaneity important but so is intent. You can't pretend; it just won't happen. If you say you are going to burn a leaf on the plant and don't mean it, nothing will happen. So you can't pretend regarding a threat to the plant's "well-being", nor can you plan when working for repeatability.

Young people know that spontaneity and repeatability don't go together. I hear constantly from people in different parts of the country, wanting to know what to do to cause plant reactions. I tell them: "Don't do anything. Go about your work; keep notes so later you can tell what you were doing at specific times, and then transfer that to your chart recording of tracing changes. But don't plan anything, or the experiment won't work." The individuals who do this often discover their own equivalent to my initial observation, and they often get first prize in science fairs, etc. But then they get to Science 101, where they're told that what they have already experienced is not important.

There have been a few attempts by scientists to replicate my work with the brine shrimp, but these have all been methodologically inadequate. When they learned that they had to automate the experiment, they merely went to the other side of a wall, then used closed-circuit television to watch what's going on.

Clearly, they weren't removing their consciousness from the experiment. It is so very easy to fail at that experiment—and, let's be honest, some of the scientists who attempted to reproduce it were relieved when they failed, because to have succeeded would have been to go against the body of scientific knowledge.

Finally, I just gave up trying to fight scientists on this because I know that even if the experiment fails, the people attempting it will still see things that will change their consciousness. That means they will never be the same.

I get people coming up now that would not have said anything 20 years ago. They often say, "I think I can safely tell you now how you really changed my life with what you were doing back in the early '70s". These are scientists who didn't feel they had the luxury back then to rock the boat for fear that their credibility, and thus grant requests, would have been affected.

BIOSIGNALLING AT THE QUANTUM LEVEL

DJ: The emphasis on repeatability seems anti-life, since life itself is not repeatable. And that emphasis is incredibly important because, as Francis Bacon made clear, repeatability is inextricably tied to control. And control is fundamentally what Western science is about. Or forget Western science; control is what Western

culture is really all about. For scientists to give up predictability means they must give up control, which means they must give up Western culture, which means it's not going to happen until civilisation collapses under the weight of its own ecological excesses.

Okay. We are faced with several options. We can believe you are lying, and so is everyone else who has ever experienced this. We can believe that what you are saying is true, and that the whole notion of repeatability—and in essence, then, the whole direction of the scientific method—needs to be reworked, as well as the whole notions of consciousness, communication, perception and so on. Or we can believe that you are mistaken. Is there a possibility that you've overlooked some strictly Cartesian,

Baconian, mechanistic answer for your observations? I read somewhere that one scientist's response to your work was that there must be a loose wire in your lie detector.

CB: In 31 years, I've found all my loose wires. No, I can't see any mechanistic solution. Some parapsychologists believe I've mastered the art of psychokinesis and that I move the pen with my mind—which would be a pretty good trick unto itself—but that overlooks the fact that I've automated and randomised many of the experiments to where I'm not even aware of what's going on until later when I study the resulting charts and videotapes.

The conventional explanations have worn pretty thin. Static electricity is one explanation proposed. That one got printed in *Harper's*. If you scuffle across the room and touch the plant, you get a response. But, of course, I seldom touch the plant during periods of observation—and in any case, that response would be totally different.

DJ: So what is the signal that is picked up by the plant?

CB: I don't know. I don't believe the signal, whatever it is, dissipates over distance, which is what we'd get if we

were dealing with an electromagnetic phenomenon. I used to hook up a plant, then take a walk with a randomised timer in my pocket. When the timer went off, I'd return home. The plant always responded the moment I turned around, no matter the distance. And the signal from Phoenix was just as strong as if Brian O'Leary were in the next room. I feel comfortable in saying distance doesn't denigrate the signal.

Also, we've attempted to screen the signal using lead-lined containers and other materials, but we've found we can't screen it out. This makes me think the signal doesn't actually go from here to there, but instead is manifesting in different places, not having to travel to be there.



The historic dracaena plant, still thriving in the lab in 2002.
(Photo from *Primary Perception*, 2003)

This ties to my feelings about time of transmission. I suspect that it takes no time for the signal to travel. There is no way, using Earth distances, that we could test this because if the signal were electromagnetic it would travel at the speed of light; biological delays would consume more than the fraction of a second it would take for the signal to travel. The only way to test this would be in outer space.

I get support in this belief—that the signal is neither time nor distance dependent—from some quantum physicists. There is something called the Bell theorem, which states that when an atom at a remote location changes its spin, an atom here will change instantly as well.

All this, of course, places us firmly in the territory of the metaphysical, the spiritual. Think about prayer or meditation. If you were to pray to God, and God was hanging out on the far side of the galaxy and your prayer travelled at the speed of light, your bones would long since be dust before God responded. But if God, however you define God, is everywhere, the prayer doesn't have to travel.

DJ: I'm sorry if I am being dense. Let's get real concrete. You have the image of burning the plant...

CB: The image, yes. Not words.

DJ: And distance doesn't matter. So what precisely happens in that instant? How does the plant react?

CB: I don't claim to know. In fact, I have attributed a lot of my success in being still active in this field—in having not been neutralised—to the fact that I make no claim to that very thing. In other words, if I give a faulty explanation, it doesn't matter how much data I have or how many quality observations I've made; the mainstream scientific community will use the incorrect explanation to throw out my data and observations. So I've always said that I don't know how this happens. I'm an experimentalist. I'm not a theorist.

CONSCIOUSNESS REDEFINED

DJ: I'm still confused. What is consciousness, then? The capacity for plants to perceive intent suggests to me a radical redefinition of consciousness.

CB: You mean it would harm the notion of consciousness as something humans have a corner on?

DJ: Or other of the so-called higher animals. Because plants don't have brains, they cannot, according to Western thought, have consciousness.

CB: I have a whole book upstairs on the consciousness of the atom. I think Western science overexaggerates the role of the brain in consciousness. Consciousness could exist on an entirely different level—on the etheric level, for example. Some very good research has been done on remote viewing; that is, describing conditions at a distant location. More good research has been done on survival after bodily death. All of it points toward the notion that consciousness need not specifically be correlated with grey matter. That is another straitjacket we need to rid ourselves of. The brain may have some things to do with memory, but a strong case can be made that much memory is not stored there.

DJ: The whole notion of cellular or at least bodily memory is familiar to any athlete. When you practise, you are trying to build up memories in your muscles.

CB: The brain might not even be part of that loop.

DJ: I was a high-jumper in college, and I knew that if I were conscious I would miss the jump. I had to get my mind out of the way. The same is true in basketball. If the game is on the line, the last thing you want to do is think about it. You want your muscles to do what they do.

CB: When I got out of the navy, around 1945, I started what was at the time the largest weightlifting gymnasium here on the West Coast. We all understood that a part of our work was to focus on the muscle cells, asking them to get bigger—cellular communication with those muscles, asking them what they want, and telling them what you want.

DJ: I'm also thinking about articles I've read on the physiological after-effects of emotional trauma—child abuse, rape, war. A lot of research shows that trauma imprints itself on different parts of your body. A rape victim might later feel a burning in her vagina; someone who was abused late at night might have trouble falling asleep—for purely physiological reasons.

CB: If I bump myself, I explain to the body tissue in that very area what happened. I don't know how effective that philosophy is, but it can't hurt.

DJ: Let's push this notion of consciousness further. Have you done some work also with what would normally be called inanimate materials?

CB: I've shredded some things and suspended them in agar-agar. I get electric signals, but not necessarily relating to anything going on in the environment. It's too crude an electroding pattern for me to decipher. But I do suspect that consciousness goes much, much further.

Also, in 1987 I participated in a University of Missouri program which included a talk by Dr Sidney Fox, then connected with the Institute for Molecular and Cellular Evolution at the

University of Miami. Dr Fox had recorded electric signals from protein-like material that showed properties strikingly similar to modern, living cells. The simplicity of the material being observed and the self-organising capability being displayed suggests to me a biocommunication capability present at the very earliest states in the evolution of life on this planet. If true, who or what would be communicating with this material?

Of course, the Gaia hypothesis—the idea that the Earth is a great big working organism with a lot of corrections built in—fits in nicely with this. The planet is going to get the last word concerning the damage humans are inflicting upon it. It's only going to take so much of the abuse going on, and then it may well burp and snort a little, and a good bit of the population may not be around any more. I strongly suspect that nature has a way of handling abuse. I don't think it would be a stretch to attribute its defence strategy to a kind of planetary intelligence. The planet will handle it, perhaps a bit more severely than we would like. It would be nicer if we took care of the problems, but...

"I think Western science overexaggerates the role of the brain in consciousness."

"Consciousness could exist on an entirely different level—on the etheric level, for example."

REACTION FROM RUSSIAN & EASTERN SCIENTISTS

DJ: How has your work been received in other parts of the world?

CB: The Russians have always been very interested. I remember in 1973 I was asked to be the chair of the man-plant-animal communication section of the first International Psychotronic Association meeting in Prague, Czechoslovakia, and a number of mainstream Russian scientists attended—some claiming that they came all the way down from Moscow to hear my talk and to interview me for additional details. I found them very open and knowledgeable—not like here, where many people are afraid to touch these areas of research. In many ways, they seemed much more attuned to spiritual concepts than most scientists in the West. This may be because of the corner that people in the West have been put into by organised religion.

I don't believe that organised religion has done a very good job. It's supposed to tell you in a meaningful way where you came from, what you're doing here and where you're going, and in my opinion it fails on every one of these counts. This leads, so far as I am concerned, to our present sorry state where, to take medical care as an example, we are faced with an awful lot of people who are tired of living and afraid of dying. And so billions of dollars are spent to keep them in that state of limbo. They certainly aren't happy, yet they're so unprepared for death, so unassured as to what will happen to them in the dying process that there seems nowhere for them to turn.

DJ: How are you treated in the Indian subcontinent and the Far East?

CB: Whenever I encounter Indian scientists—Buddhist or Hindu—and we talk about what I do, instead of giving me a bunch of grief, they say, "What took you so long?" My work dovetails very well with many of the concepts embraced by Hinduism and Buddhism.

DJ: What are we as Westerners afraid of?

CB: Maybe the question is, "Why aren't Western scientists working on this more?" I think the answer is that if what I am observing is accurate, many of the theories we've built our lives on need complete reworking. I've known biologists to say, "If Backster is right, we're in trouble". It takes a certain kind of character and personality to cope with that.

The big question I think we need to ask our Western scientific community is the one the Hindu and Buddhist scientists ask me: "What took you so long?" Scientists and that whole community in general are caught in a difficult place because, in order to maintain our current mode of scientific thought, they must ignore a tremendous amount of information. And more of this information is being gathered all the time. I think we're going to see a shift in the near future. People in scientific pursuits are stumbling all over this biocommunication phenomenon; it seems impossible, especially given the sophistication of modern instrumentation, for

them to miss this fundamental attunement that is happening all around us, and only for so long are they going to be able to pretend it's the result of "loose wires".

DJ: If your work were tomorrow to be commonly accepted and acted upon, not only by people experientially but by the scientific community, what would that mean?

CB: It would mean a radical rethinking of our place in the world. I think we're seeing it already. There are some places now where insurance companies are paying for alternative medicines. And the acceptance of Deepak Chopra, who lectures on the very things we're talking about here, is a big step. Now that this acceptance has started—even to a limited extent—it will continue to pick up momentum. I'm seventy-three now, and even in my days I think I'll see a revolution in perspective.

I went to a meeting in Sri Lanka last December, which had people from India, Pakistan, a couple of hundred from Taiwan and about that many from mainland China. Everyone got along beautifully, speaking the common language of alternative medicine. There were very few US scientists there, which is both unfortunate and expected. We in the United States are holdouts, but that will not last much longer. We cannot forever deny that which is so clearly there. ∞

About the Interviewer:

Derrick Jensen is the author of *A Language Older Than Words*, *The Culture of Make Believe*, and many other books including, most recently, *Welcome to the Machine: Science, Surveillance, and the Culture of Control*. He writes for the *New York Times Magazine*, *Audubon*, *Sun Magazine* and *The Ecologist*, among many others. You can read more about him and his work at <http://www.derrickjensen.org>.

Derrick Jensen's interview was first published as "The Plants Respond: An Interview with Cleve Backster" in *Sun Magazine*, July 1997.

About the Interviewee:

Cleve Backster founded The Backster Research Foundation, Inc. in 1965 to expand on his polygraph work which he started in the late 1940s. Since 1966 he

has also been conducting extensive research into biocommunication. His work is featured in the bestselling book, *The Secret Life of Plants*, by Peter Tompkins and Christopher Bird (Harper & Row, 1973), and *The Secret Life of Your Cells*, by Robert Stone (Whitford Press, 1989). His only book, *Primary Perception: Biocommunication with Plants, Living Foods, and Human Cells* (White Rose Millennium Press, 2003) is reviewed in this issue.

Mr Backster teaches at the Backster School of Lie Detection and is an international speaker on biocommunication. He is on the teaching faculty at the California Institute for Human Science and serves on the advisory board of the Institute of HeartMath in Boulder Creek, Colorado.

He can be contacted at The Backster Research Foundation, Inc., 861 Sixth Avenue, Suite #403, San Diego, CA 92101, USA, web-site <http://www.primaryperception.com>.



Cleve Backster and his assistant test the dracaena plant in 1966. (Photo from website, <http://www.primaryperception.com>)

AN INTRODUCTION TO GLOBAL SCALING THEORY

by Dr Hartmut Müller © 2004

Nature continues to amaze us with an almost infinite variety of phenomena. Man has been searching for centuries to find the principle that "holds the world inside together". Today we are closer to the solution of this puzzle than ever before.

The "Sacrament" of Physical Measuring

From the time of Galileo and Newton we have known and studied properties that are common to all material phenomena: space, time and motion. These are physical properties, which explains why physics holds a fundamental position among all of the natural sciences.

Till the end of the 20th century, physics dealt with the exploration of quantitative relationships between these fundamental properties and their derivatives. In the centre of its epistemological paradigm was physical measuring, becoming something like the "sacrament" of scientific production.

At the same time, this paradigm brought about the end of the ancient student-master relationship between natural sciences and mathematics. In the academic enterprise of today, the mathematician only develops the models. It is the physicist (chemist, biologist, geologist) who decides which of the models matches the measurements and gets applied. As a result of this division of labour, mathematics became more and more "instrumentalised" and hence isolated from its intellectual source—the natural sciences.

And so it was that physics itself was demoted to a mere interpreter of models and ideas that got completely out of touch with reality—and this to an ever greater extent. Today, to calculate a modern physical model "up to last digit" and verify it by measurement is possible only for the most simplified cases.

Physical laws have degenerated to nothing more than hair-splitting; physical facts independent of a model they describe hardly exist anymore.

A Scientific Gold Mine

The scientific division of labour according to the example of large-scale industries also had its positive consequences ("Nothing is so bad that it wouldn't be useful", as an old Russian saying goes).

The physical compatibility of completely different mathematical models made it necessary to bring precision of physical measurements to unprecedented heights.

Over decades a priceless, colossal database was accumulated. It contains the spectral lines of atoms and molecules, the masses of the elementary particles and atomic nuclei, atomic radii, dimensions, distances, masses and periods of revolution of the planets, moons and asteroids, the physical characteristics of stars and galaxies, and much more.

The need for measurements of the highest precision promoted the development of mathematical statistics which, in turn, made it possible to include precise morphological and sociological data as well as data from evolutionary biology. Ranging from elementary particles to galactic clusters, this scientific database extends over at least 55 orders of magnitude.

Yet, despite its tremendous cosmological significance, this database did not become the object of an integrated (holistic) scientific investigation until 1982. The treasure lying at their feet was not seen by members of the

labour-divided, mega-industrial scientific community.

The first indication of the existence of this scientific goldmine came from biology. As a result of 12 years of research, Cislenco published his *Structure of Fauna and Flora with Regard to Body Size of Organisms* (Moscow, 1980). His work documents what is probably the most important biological discovery in the 20th century. Cislenco was able to prove that segments of increased species representation are repeated on the logarithmic line of body sizes in equal intervals (approx. 0.5 units of the decadic logarithm).

The phenomenon is not explicable from a biological point of view. Why should mature individuals of amphibians, reptiles, fish, birds and mammals of different species find it similarly advantageous to have a body size in the range of 8–12 centimetres, 33–55 centimetres or 1.5–2.4 metres?

Cislenco assumed that competition in the plant and animal kingdoms occurs not only for food, water and other resources, but also for the best body sizes. Each species tries to occupy the advantageous intervals on the logarithmic scale, where mutual pressure of competition also gives rise to "crash zones". However, Cislenco was not able to explain why both the crash zones and the overpopulated intervals on the logarithmic line are always of the same length and occur at equal

Some Natural Physical Standard Measures			
Name	Symbol	Formula	Value
rest mass of the proton	m_p	measurement	$1,67262 \cdot 10^{-27} \text{ kg}$ $938,272 \text{ MeV}/c^2$
speed of light	c	measurement	299792458 m/s
Compton wavelength of the proton	λ_p	$\lambda_p = h / (2\pi \cdot c \cdot m_p)$ (h =Planck's Constant)	$2,10309 \cdot 10^{-16} \text{ m}$
natural frequency of the proton	f_p	$f_p = c / \lambda_p$	$1,4254869 \cdot 10^{24} \text{ Hz}$
black temperature of the proton	T_p	$T_p = m_p / k$ (k =Boltzmann's Constant)	$1,0888 \cdot 10^{13} \text{ K}$
complete angle	2π	circumference/radius	6,2831853
unit of quantity	1	1	1

Table 1

distance from each other; nor could he figure out why only certain sizes would be advantageous for the survival of a species and what these advantages actually are.

Cislenko's work caused the German scientist Dr Hartmut Müller to search for other scale-invariant distributions in physics, as the phenomenon of scaling was well known in high-energy physics. In 1982, he was able to prove that there exist statistically identical frequency distributions with logarithmic, periodically recurrent maximums for the masses of atoms and atomic radii as well as the rest masses and life-spans of elementary particles.

Müller found similar frequency distributions along the logarithmic line of the sizes, orbits, masses and revolution periods of the planets, moons and asteroids. Being a mathematician and physicist, he did not fail to recognise the cause of this phenomenon in the existence of a standing pressure wave in the logarithmic space of the scales/measures.

The Logarithmic World of Scales

What actually is scale? Scale is what physics can measure. The result of a physical measurement is always a number with a measuring unit, a physical quantity.

Say we have measured 12 cm, 33 cm and 90 cm. Choosing as the standard measure (etalon) 1 cm, we will get the number sequence 12...33...90 (without measurement unit or, as the physicist would say, with unit 1). The distances between these numbers on the number line are $33 - 12 = 21$ and $90 - 33 = 57$. If we were to choose another measuring unit such as the ell, with 49.5 cm, the number sequence will be 0.24...0.67...1.82. The distance between the numbers has changed. It is now $0.67 - 0.24 = 0.42$, and $1.82 - 0.67 = 1.16$. On the logarithmic line, the distance will not change; no matter what measuring unit we choose, it remains constant. In our example, this distance amounts to one unit of the natural logarithm ($\ln$) (with radix $e = 2.71828...$): $\ln 33 - \ln 12 = \ln 90 - \ln 33 = \ln 0.67 - \ln 0.24 = \ln 1.82 - \ln 0.67 = 1$.

Physical values of measurement therefore own the remarkable feature of logarithmic invariance (scaling). So, in reality, any scale is a logarithm.

It is interesting that natural systems are not distributed evenly along the logarithmic line of the scales. There are "attractive" sections which are occupied by a great number of completely different natural systems; and there are "repulsive" sections

that most natural systems will avoid. Growing crystals, organisms or populations that reach the limits of such sections on the logarithmic line either will grow no more or will begin to disintegrate, or else will accelerate growth so as to overcome these sections as quickly as possible.

The Institute for Space Energy Research in memory of Leonard Euler (Institut für Raum-Energie-Forschung, IREF) was also able to prove the same phenomenon in demographics (stochastic of worldwide urban populations), in economics (stochastic of national product, imports and exports worldwide) and in business economics (stochastic of sales volume of large industrial and middle-range enterprises, stochastic of worldwide stock exchange values).

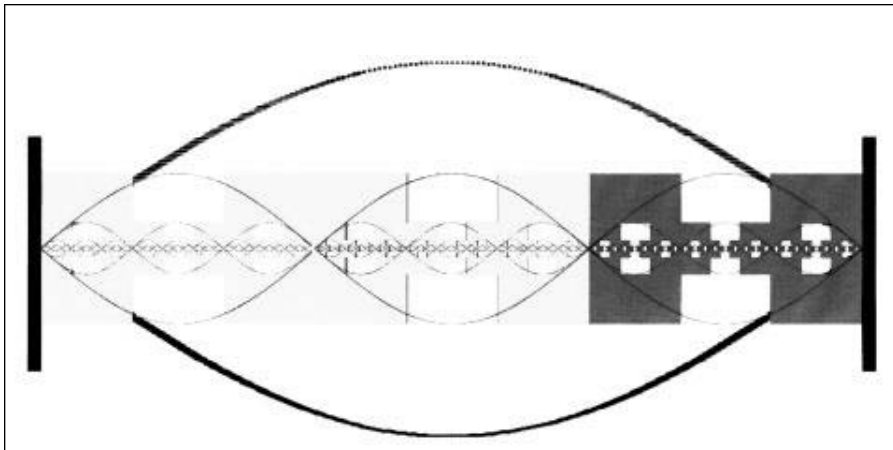
The borders of "attractive" and "repulsive" segments on the logarithmic line of scales are easy to find because they recur regularly with a distance of *three* natural logarithmic units. This distance also defines the wavelength of the standing pressure wave: it is six units of the natural logarithm.

By its anti-nodes, the global standing pressure wave replaces matter on the logarithmic line of scales and concentrates matter in the node points. Thus in the transit from wave peak (anti-node) to wave node, there occurs a tendency of fusion; while at the transition from node point to anti-node, disintegration tendencies arise. This process causes a logarithmic periodical change of structure. Packed and unpacked systems alternately dominate on the logarithmic line of measures at distances of $3k$, i.e., 3, 9, 27, 81 and 243 units of the natural logarithm.

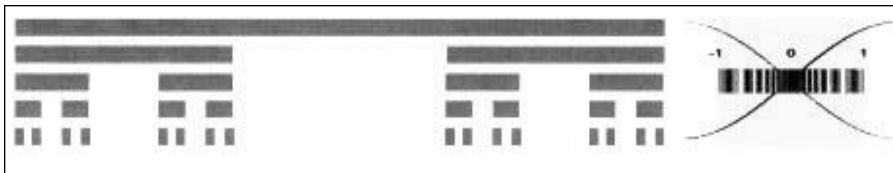
Sound Waves in Logarithmic Space as Cause of Gravitation

The existence of a standing density wave in logarithmic space explains, for the first time in the history of physics, the origin of gravitation. The global flow of matter in the direction of the node points of the standing density wave is the reason for the physical phenomenon of gravitational attraction. Thus particles, atoms, molecules, celestial bodies, etcetera—the scales/measures of which stabilise in the node points of the standing pressure wave—become gravitational attractors.

In physical reality, therefore, the standing density wave in the logarithmic space of scales also manifests as a global standing gravitational wave. In consequence, the exact identity of value for inert and gravitational masses of physical bodies (as it is claimed by physics today), independent of



The distribution of matter in the logarithmic space of scales (above) in first approximation has the fractal dimension of Cantor dust (below left), but is deformed hyperbolically in the proximity of a node point (below right)



The continued fractional structure of the distribution of matter in logarithmic space ensures that the concentration of matter in the proximity of the node point increases hyperbolically.

the body's density or material, can occur only in the exact node points of the global standing density wave.

So far, systematic measurements to verify this postulate of Global Scaling Theory have not been carried out. However, the Institute of Solid State Physics at Friedrich Schiller University is preparing freefall experiments (pseudo Galileo tests) at the Bremen gravity tower in order to determine the possibility of material-related violation of the equivalence principle, with a hitherto unmatched precision of $< 10^{-13}$.

And the Satellite Test of Equivalence Principle (STEP), planned for 2004, aspires to an observational limit of $c. 10^{-18}$. At a height of 550 kilometres, comparisons will be made of acceleration velocities of four different pairs of test masses moving on an almost circular solar-synchronous orbit (see website <http://einstein.stanford.edu/STEP>).

The "Sound Barrier" of the Universe

Standing waves can only form if the medium in which they propagate is bounded. Consequently, the existence of a standing density or pressure wave in the universe means that the universe is limited by scale. At the universe's lower horizon of scale, density of matter reaches a maximum; at its upper horizon, it reaches a minimum. The two horizons constitute the universe's "sound barrier". At precisely these phase transitions, pressure waves are reflected; they will overlap and form standing waves. A standing wave can only exist for any length of time if the medium is permanently provided with energy from outside. This means that our universe is in a constant energy exchange with other universes.

Standing waves are very common in nature because every medium is limited or bounded, be it the water of the oceans, the air of the Earth's atmosphere or the radiation field of the Sun's atmosphere. Standing waves excite the medium into natural oscillations and, due to the fact that the amplitude of a standing wave is no longer time dependent but only space dependent, these eigenvibrations will move in sync across the whole medium.

A wave occurs whenever an oscillating particle in a medium excites adjacent particles into vibrations so that the process propagates. Due to the viscosity or elasticity of the medium and the inertia of the particles, their oscillation phases differ and the

physical effect of a phase shift in space—termed a "propagating wave"—will arise. The rate of this phase shift (phase velocity) is always finite and dependent on the medium.

In contrast, phase velocity of a standing wave between two adjacent node points is zero because all particles oscillate in phase. This gives rise to the impression that the wave "stands". In each node point, the phase actually bounces 180 degrees—so phase velocity is theoretically infinitely high. It is precisely this property that makes standing waves so attractive for communication.

The existence of a standing density wave in logarithmic space explains, for the first time in the history of physics, the origin of gravitation.

Standing Waves as Carrier Waves for Information Transmission

Standing waves do not transmit energy; they merely pump energy back and forth within half a wavelength. Half a wavelength is completely sufficient—even for interplanetary communication—if we are dealing with standing waves in logarithmic space.

The wavelengths of standing density waves in logarithmic space are 2×3^k , i.e., 6, 18, 54, 162 and 486 units of the natural logarithm. Half a wavelength, therefore, corresponds to 3, 9, 27, 81 and 243 units. These are relative scales of 1.3 and 3.9 and 11.7 and 35.2 and 105.5 orders of magnitude.

Exactly in these intervals, node points occur. Hence, node points mark scales relating as 1:20, 1:8103, $1:5.32 \times 10^{11}$, $1:1.5 \times 10^{35}$ and $1:3.4 \times 10^{105}$. Within the scope of these scales, communication between two adjacent node points is possible.

The ability to modulate a standing wave is confined to its node points, because it is only in the immediate proximity of the node points that energy can be fed into or taken from a standing wave. If it is a standing wave in linear space, the node points are simply locations in which attachment of an external oscillatory process is possible.

Node points of a standing wave in logarithmic space, however, are particular scales which have different frequencies assigned to them. In order to calculate these frequencies, it is necessary to acquaint oneself with the mathematical foundations of Global Scaling Theory.

The Physics of the Number Line

The world of scales is nothing else but the logarithmic line of numbers known to mathematics at least since the time of Napier (1600). What is new, however, is the fundamental recognition that the number line has an harmonic structure which is itself the cause for the standing pressure wave.

Leonard Euler (1748) had already shown that irrational and transcendental numbers can be uniquely represented as continued fractions in which all elements (numerators and denominators) will be natural numbers. In 1928, Khintchine succeeded in providing the general proof.

In the theory of numbers, this means that all numbers can be constructed from natural numbers, the universal principle of construction being the continued fraction. All natural numbers 1, 2, 3, 4, 5, ... in turn are constructed from prime numbers, these being natural numbers which cannot be further divided without remainder, such as 1, 2, 3, 5, 7, 11, 13, 19, 23, 29, 31, ... (traditionally, 1 isn't classed as a prime number, although it fulfills all criteria). The distribution of prime numbers on the number line is so irregular that no formula had been found which would perfectly describe their distribution—until the Theory of Global Scaling was able to solve this mystery.

The distribution of numbers is indeed very irregular, but only on the linear number line. On the logarithmic number line, large gaps of prime numbers recur in regular intervals. Gauss (1795) had already noticed this. Thus, the set $\pi(n)$ of prime numbers up to the number n can be approximated by the simple formula, $\pi(n) = n / \ln n$.

The reason for this phenomenon is the existence of a standing density wave on the logarithmic number line, the node points of this density wave acting as number attractors. This is where prime numbers will "accumulate" and form composite numbers, i.e., non-primes, such as the seven non-primes from 401 to 409. Hence a "prime number gap" will occur in this place.

Precisely where non-primes (i.e., prime

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clusters) arise on the logarithmic number line, there it is that matter concentrates on the logarithmic line of measures. This isn't magic; it is simply a consequence of the fact that scales are logarithms, i.e., "just" numbers.

So the logarithmic line of scales is nothing else but the logarithmic number line. And because the standing pressure wave is a property of the logarithmic number line, it determines the frequency of distribution of matter on all physically calibrated logarithmic lines—the line of ratios of size, that of masses, of frequencies, temperatures, velocities, etc.

Now, in order to find a node point on the logarithmic line, one only needs the number line (that everybody knows) and a natural standard measure with which to multiply (calibrate) the number line. The wavelength of the standing density wave on the logarithmic number line is known. The distance between adjacent node points is three units of the natural logarithm. Thus it is easy to calculate all nodal values $X_n = Y \times \exp(n)$ (Y being a natural standard measure, $n = 0, +3, +6, +9, \dots$).

Frequency values of node points are, for example, 5 Hz ($n=-54$), 101 Hz ($n=-51$), 2032 Hz ($n=-48$), 40.8 kHz ($n=-45$), 820 kHz ($n=-42$), 16.5 MHz ($n=-39$), 330.6 MHz ($n=-36$), etc. The frequency ranges around 5 Hz, 100 Hz, 2 kHz, etc. are predestined for energy transmission in finite media.

This is also where the carrier frequencies for information transmission in logarithmic space are located. Frequencies that occur near a node point are not just very common in nature but are also used in technological applications.

Natural Standard Measures: The Key to Global Scaling

Exact knowledge of the harmonic structure of logarithmic space is the gateway to global scaling. In order to open the gate, one needs the key: natural standard measures (see table 1 on opening page).

Natural standard measures are themselves values of node points. In the node point of a standing wave, vibrations do not occur; there is stillness. This is why natural standard measures have a high degree of stability. The rest mass of the proton remains stable over a minimum of 10^{30} years. For the same

Exact knowledge of the harmonic structure of logarithmic space is the gateway to global scaling.

In order to open the gate, one needs the key: natural standard measures.

reason also, the speed of light in a vacuum constitutes a rather obstinate value. The existence of stable natural standard measures is the physical basis of a natural metrology on which Global Scaling Theory rests.

Continued Fractions as a "World Formula"

In 1950, Gantmacher and Krein proved that the spatial distribution of free-moving particles in linear oscillating chain systems can be described by a continued fraction (see below). Terskich (1955) was able to prove the same for non-linear oscillating

chain systems. In 1982, Müller showed that the distribution of matter in logarithmic space also has a continued fraction structure. This structure provides that the concentration of matter increases hyperbolically in the proximity of node points.

In first approximation, the distribution of matter in the logarithmic space of scales has the fractal dimension of Cantor dust, but is being deformed hyperbolically in the proximity of a node point (see illustration).

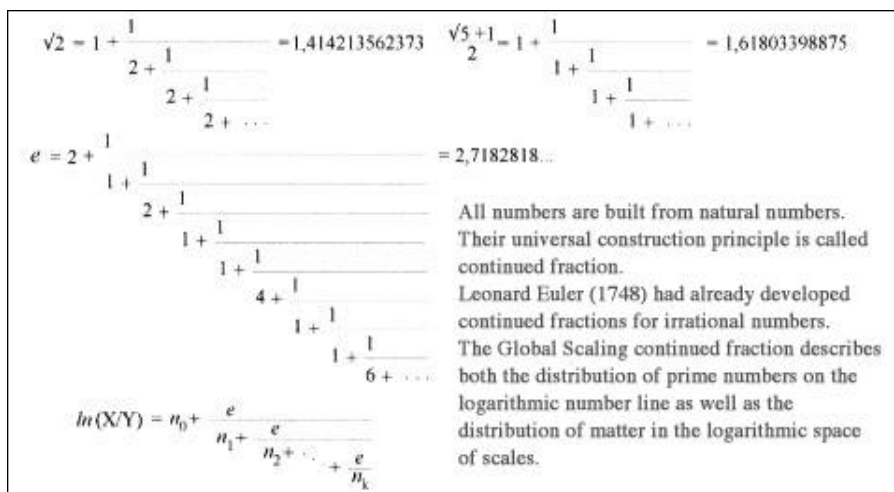
The mathematical aspect is to be found in the realisation that not only is it possible to represent every number as a continued fraction, but the distribution of numbers on the logarithmic number line altogether can be represented as such.

This mathematical aspect has immediate physical consequences: wherever one works with numbers—be it in the natural sciences, sociology or economy—one will encounter the phenomenon that there are certain attractor values that all systems, totally independent of their character, prefer, and that the distribution of these attractor values along the logarithmic number line follows a (fractal) continued fraction rule.

This continued fraction rule "contains" physics, chemistry, biology and sociology insofar as these disciplines work with scales (real numbers), i.e., insofar as measurements are made. Many results of complicated large-scale measurements therefore can be relatively easily pre-calculated within the frame of Global Scaling Theory; for example, the temperature of the cosmic microwave background radiation, whose value cannot be larger than $T_p \times \exp(-29) = 2.7696$ K; the rest mass of the neutron $m_n = m_p \times \exp(1/726) = 939.5652$ MeV, as well as the rest masses of other elementary particles.

Creation's Melody

In the context of Global Scaling Theory, the hypothesis of the Big Bang appears in a new light. A propagating shock wave (pressure wave) in linear space (the echo of the hypothetical primeval explosion) is not the cause of cosmic microwave background radiation, but a *standing pressure wave in logarithmic space* is. It is also responsible for the fractal and logarithmic scale-invariant distribution of matter in the entire universe. It created the universe as we know it, and recreates it continually. It is the cause of all physical interactions and forces—gravitation, electromagnetism, nuclear



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fusion and nuclear decay. It is the cause of the topological three-dimensionality of linear space, of left-right asymmetry as well as of anisotropy of time. All of these phenomena are physical effects which arise at the transition from logarithmic into linear space.

Neighbours in Logarithmic Space

The standing wave in logarithmic space now allows us to communicate across astronomical distances, practically without time delay. How is this possible? Systems in linear space that lie very remotely from each other can be very close to each other within the logarithmic space of scales. Our Sun and Alpha Centauri are four light-years away from each other in linear space, while in the logarithmic space of scales they are immediate neighbours. Once this is understood, it's not too difficult to create the physical conditions that will make communication in logarithmic space possible.

Two electrons on the same quantum level that may be thousands of kilometres apart are found in practically one and the same point within the logarithmic space of scales. The fact explains not just a whole range of

quantum mechanical phenomena, but constitutes the basis for a totally new telecommunications technology which was publicly demonstrated for the first time on 27 October 2001 in Bad Tölz, Germany.

G-Com® technology is still in its infancy (a first language modulation succeeded in July 2001), but in two important aspects it is already far superior to any other conventional means of information transmission. Firstly, a modulated standing gravitational wave can be demodulated in any location on Earth, on the planet Mars, or even outside the solar system at the very same moment in time, thus making distances and transmission times meaningless. Secondly, no waves are generated or transmitted, which is why G-Com technology does not require aerials, satellites, amplifiers or converters.

This launches a new era of telecommunications—free from electric smog. ∞

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Editor's Note:

If readers notice discrepancies in the figures in The Logarithmic World of Scales section, these can be accounted by allowing for recurring numbers.

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PROPHECIES FROM THE BILLY MEIER CONTACTS

***So many of the
Plejaren predictions
given to Swiss
contactee Billy
Meier have come
true, that we'd be
wise to heed the
warning that
terrible things will
befall humanity and
our planet if we
can't learn to live
together.***

by Michael Horn © 2004

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Proof Beyond Reasonable Doubt

Many people are still unaware of the amazing story of "Billy" Eduard Albert Meier, the now 67-year-old Swiss man whose voluntary, face-to-face contacts with extraterrestrial humans have been going on for the past 62 years. For many years, Meier was dismissed by sceptics as a fraud and hoaxer. But the recent failure of the top professional sceptics' organisation CFI-West, in Los Angeles, to duplicate even one of his "easily duplicated" UFO photos or film segments, followed by the sudden retraction by magician/debunker James Randi that the case is a hoax, has resulted in much deserved, renewed interest in the case.

In addition to producing the clearest photos, films and video of UFOs ever taken, as well as other physical evidence, for the past 48 years Meier has published the most specific, prophetically accurate, scientific and world-event-related information of any known source. Before you consider the prophetic information below, please note that from his 251st Contact on February 3, 1995, Meier published advance warning of the US attack on Iraq, the increase in Islamic terrorism to follow, the appearance of SARS, the spread of "mad cow disease", the renewed public concern over chemical warfare, and the near accident at the nuclear power plant near Lyon, France (which occurred in August 2003). All of this information and more from the 251st Contact was also published in Guido Moosbrugger's book, *And Yet They Fly!*, in September 2001—well before any of the foretold events occurred.

Combine this unprecedented evidence and all of the following with the still irreproducible, scientifically authenticated physical evidence, and you may understand why this remarkable one-armed man, who has been the target of 19 documented assassination attempts, stands at the centre of the most important story in all of human history.

In the following article I give the numbers and dates of specific contacts between Billy Meier and the Plejaren, and then an overview of the information contained in each contact. The items titled "Corroborated" show the dates and sources of the earliest corroboration of Meier's information found by the researchers. It should be noted that Genesis III published much of the material in volumes 1–4 of *Message from the Pleiades*, with the earliest copyright being 1979—the date by which almost all of the information was in the possession of the investigative team. While I present only a brief overview of the information in the specific contacts, I hope that each contact will be published in its entirety in the near future. Except where attributed to Meier, the Plejaren are the source of the information.

Absence of Erroneous Prophetic Information

If, as some people might think, Meier somehow guessed or fabricated all of this specific, prophetically accurate information, it would be logical to assume that there would have to be an even more enormous body of randomly generated erroneous information.

Unfortunately for the sceptics, there simply is no such voluminous body of inaccurate work. And it's easy to prove this, since most of the information validated so far has been culled from a couple of thousand pages of the earliest English translations of the Contact Reports, published by Meier primarily between 1975 and 1979, with additional information excerpted from contacts in the 1980s and 1990s. Let me also add that there are still thousands of pages of untranslated German texts and some unofficial English translations that contain additional, already published, prophetic information awaiting scrutiny.

CONTACT PREDICTIONS CORROBORATED

As you read (and research) the following, please consider the possibility that the extraterrestrials and Meier are attempting to offer us assistance in solving the very serious problems we face.

• 7th Contact, February 25, 1975, and 35th Contact, September 16, 1975:

Connection of A-bomb testing, explosions to ozone damage; high-frequency "elementary radiations" unknown to terrestrial scientists; damage to Earth's rotation, magnetic disturbances, polar displacement; contribution of bromine gases to ozone damage; penetration of UV through holes, killing micro-organisms and leading to disruptions in food chain, genetic mutations and other long-term negative effects for humans and the planet.

Corroborated: November 29, 1988, with report published by Lawrence Livermore National Laboratories announced this "new discovery": "Atom Bomb Testing Tied to Ozone Depletion".

Corroborated: 1991, when National Public Radio confirmed the connection between bromine gases and ozone layer damage.

Corroborated: February 24, 1992, *Los Angeles Times*, "Ozone Hole Damages Food Chain".

• 29th Contact, July 7, 1975, and 31st Contact, July 17, 1975:

Contact involved specific information about Venus, unknown at the time, including composition of atmospheric gases, surface temperatures, depth of clouds, wind speeds, atmospheric pressure, colouration, variation in terrain, etc.

Corroborated: October 1975 and August 1976, confirmed by probes from the USSR and USA respectively.

Corroborated: February 1981; USGS [US Geological Survey] was producing a topographical map of Venus which, as discovered by the investigative team, further confirmed the details Meier had published *five years earlier*.

• 31st Contact, July 17, 1975:

Semjase informed Meier that Mt Chimborazo, Ecuador, is the highest mountain on Earth, contrary to Meier's belief that it was Mt Everest.

Corroborated: June 1996 in *Earth* magazine, 21 years later.

• 45th Contact, February 25, 1976:

Semjase (Meier's extraterrestrial female contactor) warned him that our extraction of petroleum and natural gas from the Earth, the damming of waters and construction of huge cities are major factors contributing to increased earthquake/volcanic activity.

Corroborated: June 27, 1990, in *The Good Life* newspaper (now defunct), Los Angeles: "Earthquakes, Oil Interact".

• 115th Contact, October 19, 1978:

Meier described existence of Jupiter's rings, saying they are composed mainly of dust, particles, sulphur ions flung off by volcanoes on Io; described Io as the most volcanically active body in the solar system, and smooth, level-surfaced with no water; described Europa as ice-encrusted; Jupiter said to have 17 "actual" moons (Plejaren don't consider that all of Jupiter's satellites meet their standards for moons); described nature of Jupiter's huge funnel-shaped storm.

Corroborated: March 5, 1979, NASA's *Voyager 1* probe discovered the rings of Jupiter, that Io is the most volcanically

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What Does It Mean to Us?

Meier and his extraterrestrial friends seem to be able to predict, i.e., accurately calculate, the results of causal actions known to them, originating from humanity and/or nature and the cosmos. And they have made it clear that certain prophesied (undesired) events can still be changed for the better—if humanity recognises its errors and makes sufficient effort in the correct, positive direction to alter those outcomes that can still be changed.

In the 215th Contact, known as the Henoah Prophecies, special emphasis was placed on America and the very times we are in. (These prophecies are contained in the 2004 book, *And Still They Fly!*) More recent comments by Meier have also carried harsh and heavy warnings about the current American administration and leadership and the danger of its leading the world into a cataclysmic Third World War. Considering the credibility the Plejaren have established with their track record of accuracy since at least 1975, it would be wise for us to give serious consideration to their warnings about the future. Of course, it is up to each interested person to do the research necessary to determine the accuracy and authenticity of the Meier Contacts for themselves.

Should the most important event in human history—contact between an Earth human and extraterrestrial humans—actually have occurred, then we might realise that this is less about UFOs and extraterrestrials than it is about us—and our future survival.

THE HENOAH PROPHECIES

Presented by Quetzal

215th Contact, Saturday, February 28, 1987, 2.09 am

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Quetzal: ...Before I give you a clear account of the prophecies of Henoah, I would like to point out that prophecies are always changeable and can be changed for the better if man makes positive changes in his thoughts, feelings and actions, leading to that which is better and positively progressive. Prophecies always rest upon specific causes; these again result in certain effects, whereby these effects can be changed at any time if only the preceding causes are changed in their form. Therefore, it is possible that negative or evil prophecies do not have to be fulfilled if the preceding causes will be purposely changed in a manner that positivity and good develop instead of negativity and evil.

However, this does not apply to predictions, as these rest upon events that cannot be changed, are inevitable and surely and definitely will occur in the future. Predictions rest upon a preview and thus on a direct viewing of the future, and have to do with neither prophecy nor with calculation of probability. So when I make a portion of Henoah's prophecies for the third millennium known to you, it does not mean that they have to be fulfilled, because the prerequisite of fulfilment in each case would be that the already existing causes continue to exist as also continue to be created in the future so that a fulfilment of the prophecies can come to pass.

Thus, provided that human beings of Earth will become reasonable, the possibility exists that by a reasonable change in the way of thinking as well as a reasonable development in feeling and an equally reasonable way of acting, everything changes for the better and positive, whereby prophecies do not have to be fulfilled. However, if this transformation does not occur, a very evil, wicked and negative time lies ahead for the Earth and its entire population in the coming new millennium.

Billy Meier: Since the Second World War, the thoughts, feelings and actions of the human being of Earth have changed much towards the positive and good, but all that achieved is not enough in my opinion, as the great transformation towards the better has

not been achieved yet, neither by the mighty of this world nor all of mankind of Earth itself. In the years gone by, you have made many predictions and calculations of probability as well as mentioned prophetic facts concerning the economic, military and political situation on Earth, whereby I was requested to spread this information—which I indeed have done. Governments and newspapers, radio stations as well as TV stations and many private persons worldwide were informed by me. But the entire effort did not achieve anything, because up to now mankind has carried on in the old manner and has paid no attention whatsoever to prophecies, predictions and calculations of probability.

And the same will most likely be the case in the future, when I receive permission from you in the coming time to spread the prophecies of Henoah for the third millennium. But, nevertheless, I feel that Henoah's message for the future must be made known and distributed, because somehow it may bear fruit yet.

Quetzal: You apparently never give up hope. Your optimism is honourable and deserves to be heard by human beings, but the way things have developed throughout this century there is not too much hope that human beings of Earth will come to their senses and heed your words. This will then be the case only when the prophecies prove to be true or, even worse, have already come to pass. Probably only then will the time come when the defamations against you will end in regard to your contacts with us, although they will long continue to be vehemently disputed by your enemies as well as by pathological know-it-alls and critics who dismiss them as swindle, lies and fraud. The full truth about our contacts with you will be proven in the distant future, and then mankind will accept our help we offer through you—even when they erroneously assume we come from the seven-star system known to human beings of Earth as the Pleiades. [The Plejaren claim to live in the Plejares, an altered time-space configuration about 80 light-years beyond the Pleiades. MH]

Billy: Semjase and Ptaah already explained this to me. But tell us now what the new millennium will bring to human beings of Earth and the planet Earth according to the prophecies of Henoah.

Quetzal: I will do that in a moment, but I would like to explain before beginning that I am not authorised to give exact indication of years in an official manner.

If the human being of Earth continues to live in the same way as he has done up to now—forming his thoughts and feelings in the same manner, indulging in the same actions as he has hitherto—then the words of the prophecies of Henoah could not be any clearer.

The point in time at which these prophecies will begin to be fulfilled will be when a Pope will no longer reside in Rome. All of Europe will then fall victim to a terrible punishment by evil powers. The Christian religion will collapse and the churches and monasteries will end up in ruins and ashes.

Monstrous forces will be created by science and will be released by the military forces and armies as well as by terrorists, causing great destruction. Millions and even billions of people will be killed by acts of terrorism, by wars and civil wars; and finally, in some parts of the world, every third human being, and, in other places, every fourth human being, will lose his or her life. The nations of the East will rise against the nations of the West, the

West against the East. Many deaths will be inflicted upon the people by fighter and bomber aircraft, and bombs and rockets will destroy and annihilate smaller and larger villages and cities.

The people will be completely powerless against all this and will live through 888 days of Hell on Earth, suffering hunger and plagues which will claim even more lives than the war itself. The time will be severe as never before experienced on Earth. Ultimately, nothing can be bought or sold any longer. All provisions will be rationed; and if a human being steals even a small piece of bread, he/she will have to pay for it with his/her life. Many waters will mix with human blood and turn red, as once in the past the Nile in Egypt turned red with blood.

And it will be that the fanatics of Islam will rise up against the countries of Europe and all will shake and quiver. Everything in the West will be destroyed; England will be conquered and thrown down to the lowest level of misery. And the fanatics and warriors of Islam will retain their power for a long time. However, not only Europe will be affected but ultimately all the countries and peoples of the Earth, as the great horror expands to a war that will encompass the entire world.

After the turn of the millennium, the papacy will exist only a short period. Pope John Paul II is the third from last in this position. After him, only one additional pontificate will follow. Then a Pontifex Maximus follows who will be known as Petrus Romanus. Under his religious rule, the end of the Catholic Church will come, a total collapse becoming inevitable. That will be the beginning of the worst catastrophe that will ever have befallen the human beings and the Earth. Many Catholic clerics, priests, bishops, cardinals and many

others will be killed and their blood will flow in streams. But also the reformed version of Christianity will become just as infinitely small, as does Catholicism.

Horrifying weapons and a possible world war

Due to the fault of scientists, enormous power will be seized by the power-hungry and their military, their warriors and terrorists, and power will be seized as well through laser weapons of many types, but also via atomic, chemical and biological weapons. Also concerning genetic technology, enormous misuse will occur, because this will be unrestrainedly exploited for the purposes of war, not lastly due to the cloning of human beings for warring purposes, as this was practised in ancient times with the descendants of Henoah in the regions of Sirius.

However, this will not be all of the horrors; as besides the genetic technology and the chemical weapons, far worse and more dangerous and more deadly weapons of mass destruction will be produced and will be used. The irresponsible politicians will unscrupulously exercise their power, assisted by scientists and obedient military forces serving them, who together hold a deadly sceptre and will create clone-like beings which will be bred in a total lack of conscience and will be scientifically manipulated to become killer machines. Division by division and devoid of any feelings, they will destroy, murder and annihilate everything.

The USA will set out against the Eastern countries ahead of all other financial states and simultaneously she will have to defend herself against the Eastern intruders. In all, America will play the most decisive role, when in the guise to strive for peace and to

If the human being of Earth continues to live in the same way as he has done up to now—forming his thoughts and feelings in the same manner, indulging in the same actions as he has hitherto—then the words of the prophecies of Henoah could not be any clearer.

active body in the solar system and that Europa is covered in ice—five months *after* Meier published this information.

Corroborated: September 15, 1998, Cornell University scientists confirmed particulate composition of rings from Jupiter's moons (first theorised by astronomers on August 2, 1995). *Meier's information is 20 years ahead of Cornell's.* (While scientists believe that the source of the particulate matter is explosions caused by meteorite strikes on the moons' surfaces, Meier's information seems more accurate, i.e., matter being explosively propelled from volcanoes at speeds up to 2,300 km/hour to heights of 180 km is more likely the true source of most particulate-forming rings.)

Additional information from the 115th Contact was accidentally given to lead investigator Col. Wendelle Stevens, USAF (Ret.), and shown by him to Maj. Rudolph Pestalozzi, USAF (Ret.) and Mr O. Richard Norton, former director of the Flandreau Planetarium, Tucson, Arizona.

Witnessed by the three men, the information was secured until after the following specific, predicted events occurred:

- Jonestown massacre (Nov 18, 1978)
- Overthrow of the Shah of Iran (Jan 1979)
- Chinese invasion of North Vietnam (Feb–Mar 1979)
- Iran Hostage Crisis (Nov 1979–Jan 1981)
- Soviet invasion of Afghanistan (Dec 1979)
- Terrorist attack on Iranian Embassy, London (Apr–May 1980)
- Abdication of Queen Juliana of The Netherlands (Apr 1980)
- Death of Tito of Yugoslavia (May 4, 1980)
- Mount St Helens eruption (May 18, 1980)
- Assassination of Indian Prime Minister Indira Gandhi (Oct 31, 1984).

• **1978:**

In a Wasserman publication, Meier foretold the launch of a telescope at end of the 1980s that would make unfathomable discoveries in space, and wrote that a comet would be discovered in the late 1980s to early 1990s; it would be named *Toutatis*, and may threaten Earth in September 2004..

Corroborated: April 1990, Hubble telescope was launched.

Corroborated: 1989, French astronomers discovered a comet [asteroid], named it *Toutatis*, and predicted it would come closest to Earth on September 29, 2004.

• **1978, 1992:**

In his book, *Existing Life in the Universe*, Meier stated that there are two small planetary bodies outside Pluto's orbit; he called them Trans-Pluto and Uni, and said scientists will discover them in the not-too-distant future.

Corroborated: July 3, 2001 and October 7, 2002, the BBC reported that scientists have discovered a new planet beyond Pluto.

• **150th Contact, October 10, 1981:**

Meier discussed information concerning the 29 actual moons of Saturn, and the origins of moons from asteroids.

Corroborated: November 2000, scientists announced the discovery of 12 additional moons orbiting Saturn, bringing the "official" total to 28, just one shy of what Meier reported almost 20 years earlier; scientist corroborates the likelihood that moons originate from asteroids.

fight against terrorism she invades many countries of the Earth, bombs and destroys everything and brings thousandfold deaths to the populations. The military politics of the USA will likewise know no limits, as neither will their economic and other political institutions which will be focused on building and operating a world police force, as it is the case already for a long time [*sic*]. But that will not be enough, and, in the guise of a so-called peaceful globalisation, American politics will aspire to gain absolute control of the world concerning supremacy in economy.

And this will point towards the possibility that a Third World War could develop from it, if human beings as a whole will not finally reflect upon reason, become reasonable and undertake the necessary steps against the insane machinations of their governments and military powers as well as their secret services, and call a halt to the power of the irresponsible who have forsaken their responsibility in all areas.

If this does not happen, many small and great nations will lose their independence and their cultural identity and will be beaten down, because the USA will gain predominance over them and with evil force bring them down under her rule. At first, many countries will howl with the wolves of the US, partially due to fear of American aggressions and sanctions, as will be the case with many, many irresponsible [ones] in Switzerland and Germany but also of other countries. In part, others will join in because they will be forced somehow to do so or will be misled by irresponsible promoters of American propaganda.

Finally, many Asian, African and European states will rise up against the American hegemony, once they recognise that the United States of America is only taking advantage of them for purposes of war, conquest and exploitation. In this way, many countries will become puppet states of America before reason and realisation will emerge in the responsible ones of governments and in many of the population, resulting in a turning away from the USA.

However, the great war will hardly be avoidable because the human beings of Earth will probably not accept the directions towards the better, therewith towards true love, true freedom and real peace, striving instead only towards wealth, pleasure and riches and for all manner of material values and unrestricted power. Thus, huge and deadly formations of tanks will roll across the countries while fighter planes and rockets sweep through the air and bring death, ruin, destruction and annihilation to countries and people.

If the Third World War will actually happen—as calculations and observations appear to indicate to be probable now and also during the approaching few decades—then, as now, the civilian population will above all have to bear the brunt of the enormous suffering in tremendous numbers in this entire catastrophe and, last but not least, the fault of the irresponsible scientists who by cloning will create human machines for military purposes, devoid of conscience and feelings, and will create immensely deadly and all-annihilating computer-like weapons. At the same time, the danger could become reality that the human combat machines, the military clones, will gain their independence and under their own management will bring death, devastation, destruction and annihilation to the human beings of Earth and to the planet.

The entire planet will become an arena of unparalleled suffering, which will never have existed before on Earth up to that time. The cruel happenings will last about 888 days and cause civilisation to collapse. Yet, the terrible scenario will continue, and epidemics and various diseases as well as enormous famine will be spread among the people, while the economy of the world will totally collapse and there will be no possibility to produce any goods. All foods and medications will be rationed.

The insanity of war will extend not only across the land, but the disaster will equally be spread to the oceans, into the atmosphere, even into outer space. But there will also be settlements under the ocean that will be developed in the course of the future and these will be attacked and destroyed, claiming the lives of many thousands of people. However, a certain maelstrom of destruction will also originate from the undersea facilities; because in the cities at the bottom of the ocean, groups of submarine pirates will be formed which will burst upwards from the depths of the ocean and will become involved in destructive actions of combat with naval units on the surface.

And at this time, the possibility could become reality that extraterrestrial forces intervene against the Western industrialised countries, because these will be responsible for the extreme and enormous disaster of the coming evil times. These extraterrestrial forces will give up their anonymity and their state of secrecy and will assist those who are being terrorised by the irresponsibly acting Western countries, should this possibility become reality.

In addition, apocalyptic natural catastrophes will occur which will cause all of Europe to shake and tremble; but Europe will continue to exist, even after having suffered enormous destruction.

Destruction in North America

Far in the West, it will be different; the United States of America will be a country of total destruction. The cause for this will be manifold. With her global conflicts which are continuously instigated by her and which will continue far into the future, America is creating enormous hatred against her, worldwide, in many countries. As a result, America will experience enormous catastrophes which will reach proportions barely imaginable to people of Earth. The destruction of the WTC, i.e., the World Trade Center, by terrorists will only be the beginning.

Yet all the apocalyptic events will not only be brought about due to the use of unbelievably deadly and destructive weapons—such as chemical, laser and others—and by cloned murder machines; but in addition to this, the Earth and nature, maltreated to the deepest depths by the irresponsible human beings of Earth, will rise up and cause destruction and bring death onto the Earth. Enormous firestorms and gigantic hurricanes will sweep over the USA and bring devastation, destruction and annihilation, as this from time immemorial never before will have happened [sic].

Not only will America, but also all other Western industrial countries which still live at the beginning of the new millennium in the delusion that they could dominate and rule over underdeveloped nations, i.e., Third World countries, will not only soon lose influence over these but must defend themselves against them.

According to the prophecies of Enoch, the truth about industrialised countries is that they only *seem* to appear to be true civilisations, but in fact they are not; because more and more, at the end of the 20th century and at the beginning of the third millennium, they will disregard all true love, true freedom and true wisdom as well as true peace along with all values of humaneness and all values of men's and women's true being.

But not even all the terrible happenings will hinder the USA in continuing to proceed with her actions against all countries. Even when the North American continent will be stricken by the most

terrible catastrophe which has ever been recorded, evil military powers will wreak havoc with computerised and nuclear, biological and chemical weapons, whereby it will also happen that computerised weapons become independent and cannot be controlled any longer by human beings. Overall, this is the most important part of Enoch's prophecies.

Epidemics, conflicts and disasters

Billy: There is still more to it; at least that is what you told me.

Quetzal: You are untiring; so I will point out a few more important facts of the prophecies. As of now, new epidemics have spread among the people of Earth; however, as Enoch prophesied, quite a number of further epidemics will follow. Not only AIDS will occur worldwide in the 1990s, but also epidemics such as the so-called "mad cow disease", i.e., BSE, out of which different strains of Creutzfeldt–Jakob syndrome will develop, lasting well into the new millennium. Also, an epidemic known as Ebola will cause many deaths, as well as other unknown epidemics and diseases which will sporadically arise in epidemic proportions and will be new to the human being, causing great concern.

However, most of the evil will be brought about by politics. France and Spain become involved with each other in armed conflicts, and even before World War Three will have broken out. Yet France will not only engage in armed conflicts with Spain, for within her great unrests will arise, leading to upheavals and civil war, as [will be] the case in Russia and

Sweden. Especially in France and Sweden, machinations as well as dictatorial regulations of the European Union will cause much unrest and many uprisings; but also crimes committed by gangs and organised criminal elements in these countries will cause unavoidable civil wars.

In addition, significant tensions will arise between the native citizens and immigrants from foreign countries, who as a rule also observe religious beliefs different from those of the native populace. And in the end, this will lead to severe conflicts. Hatred against strangers, foreigners and people of different religious beliefs will be the order of the day, as well as the rise of neo-Nazism, terrorism and right-extremism. Conditions similar to civil war will be in England, Wales and Northern Ireland and claim many lives.

The Soviet Union will be dissolved in this decade or at the latest by the beginning of the next. The man decisive for this action will be Mikhail Gorbachev. But this will not lead to rest, because the new Russia will continue its longstanding conflict with China over Inner Mongolia, with the result that Russia will lose a portion of this territory to China. And China becomes dangerous, especially to India, as also at this time China maintains uneasy relations with her. China will attack India; and if biological weapons are used, around 30 million human beings will be killed in the area of and around New Delhi alone. However, this will not be the end yet—because the effect of biological bombs and missiles, etc., used cannot be controlled at that time, and terrible epidemics unknown up to that point in time will arise and will spread quickly to many areas. Also Pakistan will allow herself to be misled to instigate a war against India, which will be especially dangerous in view of the fact that both countries are developing atomic weapons.

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• **215th Contact, February 28, 1987:**

Known as the Henoch (or Enoch) Prophecies, this contact contained a forewarning of the destruction of the World Trade Center (WTC) by terrorism, the series of worldwide wars that the US would subsequently launch, and military actions involving Russia, China, France, Germany, Spain, England, Scandinavia and many Third World and other countries.

Corroborated: September 11, 2001, the WTC was destroyed; the United States has already attacked Afghanistan and Iraq as of the time of this writing.

• **235th Contact, February 3, 1990:**

Warned of earthquake in California and eruption of the Redoubt volcano in Alaska for February 28, 1992.

Corroborated: The Upland quake occurred on that precise date; and the Redoubt volcanic activity began on February 21 and continued through February 28, with more activity following in March.

• **241st Contact, February 3, 1992:**

This contact contained specific corroborated warnings about:

- Landslide in Brazil, March 1992: occurred March 18, 1992;
- Nuclear accident in Russia during the third week of March: occurred March 27, 1992;
- Landers earthquake in Los Angeles for April 23 or 24, 1992: occurred April 22, 1992;
- Eruption of Mt Etna, Italy, in April 1992: reported April 15, 1992;
- Eruption of Cerro Negro, Nicaragua, in April 1992: occurred April 9–12, 1992;
- Earthquakes in Germany–Holland–Belgium area for April 1992: occurred April 13, 1992;
- Earthquakes in China–Burma (Myanmar) April 1992: occurred China–Burma border April 23, 1992.

• **249th Contact, June 13, 1994:**

Still speculative: In response to a question Meier asked regarding "mad cow disease", Ptaah stated that "BSE pathogens cannot be destroyed by simply cooking the meat and other items, or by producing meat meal", and that the temperatures necessary for killing the disease-causing prions would need to be "as high as 700°C [1292°F], and possibly even up to 1000°C [1832°F], for previously mutated pathogens that have existed for some time now". Our scientists have been raising their own estimates as to the temperatures necessary to destroy the disease-causing prions and are now more closely approaching the temperatures that the Plejaren, Ptaah, stated.

• **251st Contact, February 3, 1995:**

This contact contains startling information regarding technological developments such as hybrid warriors created by mixing human and pig DNA. People will have biochips attached to their nerve endings, and Meier warned of ominous biochipping with links to Deep Space Platform satellites and supercomputer.

Corroborated: Human–pig DNA experiments have begun in the last several years; people are starting to get "chipped".

Still speculative: Creation of half-human/half-machine beings, clones and androids; discoveries that conclusively confirm existence of previous human life on Mars; rectification of the "ageing" and "aggression" genes; Plejaren warnings of deep-impact scenario, and need for a defence system for incoming objects.

— Michael Horn

Wars and devastation in Europe and North America

Yet Russia will not rest and will attack Scandinavia, and in doing so will embroil all of Europe. And months before that, a terrible tornado will have swept across northern Europe, causing great devastation and destruction. It must still be stated that the Russian attack will occur during the summer, in fact, starting from Arhangelsk. Denmark will not be dragged into the war, due to the insignificance of this country. Yet Russia will not be satisfied with this action of war, as her will for expansion will be ravenous. And consequently Russia will launch a military attack against Iran and Turkey and will conquer these two countries in bloody fighting, causing enormous destruction.

In the Russian expansionist mentality will also be included the drive to gain control of the Middle Eastern oil deposits as well as to gain control of the southeastern region of Europe. Therefore, she will also invade the Balkans and conquer these countries there in enormous battles, causing ruthless and devastating destruction with many deaths.

This will be at the time that tremendous natural disasters will hit Italy and its people, causing severe hardship. But this will also be at the time when Vesuvius could become active again and could spread tremendous havoc. At the same time, a war will shake Italy and claim many human lives as well as cause great destruction.

Destruction of war will descend on the northern countries as strong military forces will invade them from the East and will pilage and murder as well as use bombs and missiles, like hail coming down, and hitherto unknown weapons of laser- and computer-controlled types which will destroy and annihilate everything, whereby the first target will be Hungary and after that will follow Austria and northern Italy. Switzerland will also be severely affected, but will not be the actual target; this will be France and Spain. However, the main objective of the aggressors will be to bring all of Europe under their military control, and for that purpose France will be selected to be the headquarters.

France will not only be invaded by the aggressors from the outside, but will also be conquered from within as a result of collaborative forces and other forces. This can be envisioned as being the many foreigners of a different religion living in France at that time, and specifically Islam, which will be this force working from within. Once France has fallen, a war to conquer Spain and England will take place. Subsequently, an alliance with the forces of the aggressors will be formed, which will invade Scandinavia.

For all these French-based military operations, the weapons of mass destruction stored in the arsenals of France will be used and cause evil devastation, destruction and annihilation. The aggressors from the East will force the French Army to join their military forces and lead a war of conquest against the northern countries of Europe, invading and conquering Sweden and Norway. Subsequently, these northern countries will be annexed by Russia. Military forces will also attack Finland, whereby many will be killed and an enormous destruction will be caused.

At the same time, as a civil war rages in Germany, an enormously bloody revolution will break out in England which will claim more lives than will be claimed by the civil war in Germany. And because England and Ireland have been at war for a long time already, due to the IRA and the police and military forces of England, the result will be (because this feud will continue up to that time) that this revolution will spread out to all of Ireland, especially affecting Northern Ireland. Many lives will be lost during a civil war in Wales, where differences between various parties will arise before the Third World War. Welsh and English forces will clash especially near Cymru, and claim many lives and cause great destruction.

But death, destruction and annihilation will not only rage in Europe but also in America, where much suffering will have to be endured and many deaths as well as destruction and annihilation will be. America and Russia will have the most terrible weapons of mass destruction at their disposal—a fact which is already the case to a certain extent today—and will clash with violent force against each other at that time of conflict, whereby Canada will also be dragged into this conflict. The source of this conflict will substantiate the Russian attack on the American State of Alaska and against Canada.

This conflict will result in mass killings of human beings as well as devastating destruction, annihilation and epidemics, etc., which mankind of Earth will never have seen and experienced up to that time. Not only nuclear, biological and chemical weapons will be used *en masse*, but also enormously deadly systems of computer-controlled weapons that are only in the beginning stages of development today, or will be invented and constructed during the third millennium.

Worldwide natural catastrophes

As already mentioned, enormous natural catastrophes and rolling walls of fire and violent hurricanes will rage all across America, while, in addition, all the terrible effects of war will bring thousandfold deaths, destruction and annihilation. America's largest cities will be absolutely destroyed, and firestorms will cause great disaster and misery.

Severe earthquakes and volcanic eruptions will also belong to that time, and these will cause much suffering and misery and deaths besides enormous destruction and devastation, as all of nature and the planet itself will rise up against the insanity of human beings on Earth. However, tornadoes, earthquakes and volcanic eruptions will not only rage in America, but also in Europe and in the rest of the world.

These activities have already begun at the present time, also during the past decades—with the exception that they will become increasingly more devastating in the future. And man of Earth is guilty for the most part today, as also in the future it is man who will destroy the entire environment—all of nature, the atmosphere, water and all the resources of the planet.

And through this, a shifting of weight inside the Earth takes place, caused for example by the creation of gigantic lakes by damming and by creating hollow caverns due to the exploitation of petroleum and gas, etc. And thereby unnatural inner-Earth movements are created, which also lead to unnatural tectonic effects and cause earthquakes and volcanic eruptions, which also in turn cause enormous climatic changes, resulting in horrendous tornadoes of devastating proportions which in the end will set their destructive energies free on the entire world. All of this will lead to increasingly horrible floods and unusually massive snowfalls which will advance to the southern countries and finally even to the equatorial regions, because through the insanity of human beings the Earth has begun unnoticeably to spin [strangely] as a consequence of atomic explosions inside and on the surface of the Earth. And this will be the reason that the planet will slowly but surely enter an extraordinary spinning orbit around the Sun, while the first phase is already occurring, which causes a change in climate, leading to a new ice age.

Civil wars and anarchy in America

Yet the misery on Earth will continue, as two terrible civil wars will break out in America, whereby one will follow the other. Afterwards, the United States of America will break apart and deadly hostility will prevail among her, which then leads to the division into five different territories; and it cannot be prevented that sectarian fanatics will play a dictatorial role.

Anarchy will be the worldwide condition that will prevail and torment human beings over a long period of time, as human beings will also be tormented by the many epidemics and diseases, many of them new and unknown to human beings and for this reason incurable. Due to this fact, the bodies of many human beings will slowly and miserably decay, while unbearable pain will also occur as well as blindness and terrible respiratory problems that lead to suffocation. The consciousness of many human beings will become impaired and succumb to feeble-mindedness and insanity. And all these gruesome occurrences will be traceable to biological and chemical weapons, which are the cause of not fast, but gruesome and slow deaths; and this will also occur due to the use of ray and frequency weapons which are already being developed today.

Finally, the words of Henoch may be specifically mentioned, which include that mankind of Earth, in pursuit of technology for mass destruction and greed for power, hatred, vengeance and riches, will ignore all values of Creation and will trample upon all values of love, wisdom, freedom and peace, as ancestors of the Henoch lineage have done before, to plunge the world into screaming misery, death, destruction and annihilation and into the most severe catastrophes mankind of Earth will ever have experienced. ∞

...two terrible civil wars will break out in America, whereby one will follow the other. Afterwards, the United States of America will break apart and deadly hostility will prevail among her, which then leads to the division into five different territories...

About the Author:

Michael Horn is the authorised American media representative for the Billy Meier Contacts and has researched the case for over 25 years. He is a lecturer, writer and frequent guest on radio and TV. Michael is scheduled to speak at the Bay Area UFO Expo in San Francisco in August and at the Unconventional Convention in Las Vegas in November.

Editor's Note:

The information here is just a fraction of that given to Billy Meier. For more details, and for the complete text of the Henoch prophecies, visit the website <http://www.theyfly.com>.

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GOVERNMENT WHISTLEBLOWER C. B. SCOTT JONES ON UFO SECRECY

An interview by
Linda Moulton Howe © April 2004

The Chinese told me over and over again of the amount of evidence they have from which they conclude that the ET phenomenon is real, in the sense that there are real, tangible craft penetrating their air-space.

— Dr C. B. Scott Jones, former US Naval Intelligence officer, Special Assistant in UFO Research for US Senator Claiborne Pell, 1985–1991, Founder of the Center for Applied Anomalous Phenomena (1985), the Human Potential Foundation (1989), and the Peace & Emergency Action Coalition for Earth (PEACE) (2003)

Dr Werner von Braun and the UFO Cover-up

Gaithersburg, Maryland, USA, April 21, 2004 — This past weekend at the X-Conference, the focus was on American government knowledge of an extraterrestrial presence on Earth and the cover-up of that knowledge.

There has been a policy of silence and denial about ETs and advanced technologies in the interest of national security since at least the presidency of Harry S.

Truman in the 1940s.

One of the speakers was C. B. Scott Jones, PhD, who worked in US Naval Intelligence in the 1960s to 1970s. Later, from 1985 until 1991, Scott Jones worked as a Special Assistant to US Senator Claiborne Pell, the then Chairman of the Senate Foreign Relations Committee. Dr Scott Jones's goal was to find out what other governments and scientists knew about the UFO phenomenon. At the top of his research list were the Soviet Union and China and the implied knowledge of German rocket scientist Dr Werner von Braun.

Dr von Braun began his work in the United States after World War II under Project *Paperclip*, in which German rocket experts were brought to America to create a space rocket program similar to what they had been doing in Peenemünde, Germany. Their base of operations was White Sands Missile Range, west of Alamogordo and Roswell, New Mexico. Von Braun served from 1960 to 1970 as the first Director of the Marshall Space Flight Center. He was most noted for directing the development of the giant *Saturn V* rocket that carried men to the Moon for the first time in 1969.

Scott Jones thinks that Werner von Braun not only knew about the extraterrestrial presence and discs flying rapidly over their White Sands rocket experiments, but

seemed to have insider knowledge about how the ET presence might be manipulated and used by the United States government.

For more background, see websites at the end of this interview with C. B. Scott Jones.

— Linda Moulton Howe

C. B. Scott Jones (CBSJ): We absolutely know that our country, the United States, has a determined policy of secrecy, silence, denial and misinformation on this [UFO phenomenon]. So, the big question for me and many others is: "Why?"

Linda Moulton Howe (LMH): Isn't that why a focus on Werner von Braun going back into the 1940s and Project *Paperclip* in the United States is important, because he seemed to provide some insights about why this government might perpetuate a policy of silence when he knew for a fact that we were dealing with something that fell into the non-human category?

CBSJ: Yes, the basis for the Werner von Braun comment—and that's about 20 years ago. This was after he had been in the US a long time and actually was in the twilight of his life; he was a dying person. A protégé he had selected, Carol Rosin, in an interview has given us this information. He told Carol that he had been in meetings in which

THE TWILIGHT ZONE



The original Project *Paperclip* team photographed at Fort Bliss in White Sands, New Mexico, in the 1940s. Dr Werner von Braun is sixth from the right in the front row. (Photo is courtesy of the Smithsonian Museum.)

the strategy, the corporate strategy—and it's alleged that it wasn't just his corporation, which was Fairchild, but a conglomerate—was this. It is essential to keep the income pump for the military-industrial complex primed and going to make sure that we have adequate enemies. He ticked off to Carol that essentially here is the list. Watch for this:

- first the Soviet Union, but that will collapse;
- then terrorism and crazies in other countries;
- then asteroids;
- then extraterrestrials.

That's an extraordinary list, and I must say on reflection that everything has been mentioned as a potential enemy or threat by the United States, except extraterrestrials to this point.

Foreign Assignments

LMH: In the work that you did with Senator Claiborne Pell, where you were assigned to explore the world to find out what was going on with research in other governments' efforts to understand whatever this phenomenon is, did you find there were other countries—maybe China, Russia, France—who were ready to disclose what they knew and the United States was the only obstacle between their saying to the world public, "We know we are not alone"?

CBSJ: That intrigued me, what I ran into. First of all, when I first went into the Soviet Union—this was before their bloodless revolution—the scientists I dealt with and the research directors knew they were going to have a revolution.

And they literally offered me stacks of their classified reports. We would have huge stacks of their reports over years of their official government involvement, and

the funding for that came from the Ministry of Defence and their intelligence community, the KGB and the GRU. And they identified their sources of funding to me because they were interested—I think for the obvious reason—first of all to ascertain if this [UFOs] was something coming from NATO, from the United States. Were these things that were penetrating their airspace still another threat to their national security and a provocation?

I think they very quickly realised that they could determine the difference between a U2 and naval aircraft penetrating their borders and then later on other satellite and aircraft when they came online, versus the ETs and the UFOs that came over. I asked them, "What do you think is the motivation? What is the intent of these intrusions, not only in your country but around the world?" They confessed they had no idea what the intention was.

LMH: But it underscores that this is a global phenomenon, that it is being seen by thousands of people around the planet on an ongoing basis in every country. Can you describe what you learned from what you called "the bear of a scientist" in Russia?

CBSJ: That was interesting. Since I was working for Senator [Claiborne] Pell, who was then Chairman of the Senate Foreign Relations Committee, that gave me entrée to places around the world. The title he had given

me was "Special Assistant" and no one ever asked what that really meant, which was fine. But they obviously made their own assumptions as to what the Special Assistant to the Chairman of the US Senate Foreign Relations Committee was.

So, perhaps they were overgenerous in sharing things, but I certainly appreciated whatever their expectations were.

I was frequently used as a messenger boy in every country that I went to, because they knew of my relationship with Senator Pell—the Russians less than the Chinese. The Chinese did it repeatedly.

If they had a heartburn that they wanted eased, they would say, "Look, when you get back to Washington, we want you to



Dr Werner von Braun, the German rocket scientist brought to the United States after World War II to head Project *Paperclip* at White Sands Missile Range. Project *Paperclip* was the US government's assembly of dozens of German physicists to create an American space rocket program as the German scientists had been producing in Peenemünde, Germany, during the reign of Adolf Hitler. (Photograph date and source are unknown.)

tell Senator Pell this and let's clean this up or have that stopped or get this going." It was easy for me to say I was glad to do that, and that kept the relationship warm and ongoing.

I was in the Institute of Theoretical Problems, and the Director told me late one afternoon, "Tomorrow there is going to be something new to the agenda. A very senior scientist, a hero of the Soviet Union, wants to meet with you."

I asked, "What does he want to meet about?"

Now, we had been meeting for two days on the subject of UFOs at that time.

He said, "He will tell you."

He was a huge man, and when he swept into the room his presence just took over and people pulled back from him. I held my ground as best I could, and he got right up in my face and it was a finger-pointing monologue on his part. He was telling me that the antiballistic missile treaty that had just been completed was completely unfair, and our insistence that the Soviet Union take down a large phased-array radar was not justified.

He said, "This is an important radar. It is technically not in violation."

And I said, "I can imagine that you are upset as a scientist and I imagine the military is upset because your diplomats gave it away."

And he agreed with that.

So I asked him, "What do you want me to do?"

And he said, "I want you to tell Senator Pell how unfair and how unnecessary and wrong this is."

I did that when I got back to Washington. I told my boss and he said, "Let's go to the [Senate Foreign Relations] committee." So, I told the Soviet experts on the committee about this and they just shrugged and said they didn't know what he was so mad about.

It was some time later...actually, I was reviewing my notes. I tried to take notes while I was there because so much was going on and I thought it would be poor form to have a tape recorder. So I would take notes and scribble as I did. So I was reviewing the notes, and while I had hired a good technical translator—I was confident that he was as good as he was advertised to me—[I wondered if] I had missed what he had said or the translator had missed

something. And I think the message from the hero scientist of the Soviet Union...you put it together. He knew where I was and he knew what we had been talking about for two days.

LMH: UFOs...

CBSJ: That's right. So I don't think he came principally to talk about a phased-array radar in any other context than UFOs. And I think what the translation should

The Chinese told me over and over again of the amount of evidence they have from which they conclude that the ET phenomenon is real, in the sense that there are real, tangible craft penetrating their airspace.

have been was that this radar is important to us—the Soviet Union and the United States.

And if I had had my wits about me, I should have asked, "What is the frequency of this radar picking up UFOs?"

I think then he would have answered the question. He assumed that I was smart and would figure it out. I think he would have dialogued with me if I had brought that up.

LMH: Are we tracking certain frequencies that we know are linked to very specific kinds of extraterrestrial aerial craft?

CBSJ: Linda, I don't know technically whether we are or not. If in fact they emanate on a frequency spectrum that we can monitor, the answer certainly must be "Yes". But I suspect there may be frequencies in spectrums we don't recognise. It might be a dimensional thing, and I don't think we know how to check for frequencies in this dimension and then shift to another dimension to check for frequencies there.

China Waits for America to Make First ET Disclosure

LMH: What was the most provocative information that you ran into in China?

CBSJ: The Chinese can be very direct, bless them for that. They just simply told me it was "an outrageous and transparent lie that you come to China and allege that you don't know what your own country is doing in these [UFO] fields"—essentially, "How dare you go to our people in the military attaché and our embassy in Washington, DC, and say you would like to meet senior people in the following academies and institutes who are doing the important research in UFOs and psychic phenomena, unless you have a responsibility and knowledge of what your own country was doing with it!"

I was never able to convince them that I was not among the anointed, and that kept me away from their most senior people whom I knew and identified. But they simply would not let me get to them.



THE TWILIGHT ZONE

I guess the important thing with the Chinese came from the Minister for Foreign Affairs. In a casual moment, he lamented how sad he was that the exchange of information between our countries on the subject of UFOs had stopped.

I said, "I am not familiar with that exchange. What are the additional details?"

Then I think he realised he should not have said what he did, and he sort of mumbled his way out of it.

The reason this is important is...I think it has been somewhat validated by the extraordinary 1999 report that came out of France [COMETA; see website link below], in which they say in one part of the report that there is an allegation that there is a special relationship between the United States and whatever this phenomenon is. The Chinese told me over and over again of the amount of evidence they have from which they conclude that the ET phenomenon is real, in the sense that there are real, tangible craft penetrating their airspace. That issue is essentially settled with them.

I said, "This being the case, why don't you make a public announcement and tell the world about this reality?"

And there was a short silence and he said, "China will be a quick second after the United States makes the announcement."

That again suggests there is a belief or understanding that the responsibility for the first announcement comes from the United States. And I don't understand this, Linda. I do not know what the basis of this is.

Remote Viewing Sheds Light on 1908 Tunguska Explosion

In his efforts to get more truth about the UFO puzzle, Scott Jones hired a remote viewing group that had originally trained in a classified Defense Intelligence program and later sold remote viewing as an investigative tool in the civilian world.

Scott wanted to learn more about the June 30, 1908, explosion above the ground in Tunguska, Siberia, that incinerated trees in an 18-mile-diameter circle around ground zero. Whatever blew up was so strong that, beyond the 18-mile [29-kilometre] burned circle, thousands of trees were knocked down over a 25-mile [40.2-km] radius. If the explosion had occurred over a city, the effect would have been catastrophic for all the people living there.

To date, the most common hypothesis has been that a large meteorite blew up above Tunguska in 1908. But when Scott Jones had the remote viewers, led by Ed Dames, concentrate on the historic event, they got a different answer...

— LMH

C. B. Scott Jones: Three out of five remote viewers came up with UFOs, a ship in trouble. There was an explosion—perhaps the demise of a ship having real technical difficulties.

Now I am beginning to seriously consider that the ships observed in the Roswell event were a time-travel vehicle. I don't have the physics background to make an argument for this.

To me, it would make a huge difference

in the exploitation of whatever was garnered from [Roswell] if you start out that this is from a time-travelling vehicle rather than this is from a ship that somehow got here...and these pieces of hardware we will independently exploit and see what we can learn from them. If you put it in a different context and say this is part of a time-travel vehicle, what else can we learn from the same things that have been exploited already?

LMH: Could we in the US government learn how to operate that technology and literally go backwards or forwards in time?

CBSJ: I don't know if it is bi-directional or not. I think I heard at this conference it is only back in time. If that's the case, then the travellers that are coming here are coming from our future.

And of course, that brings a great potential. If it is a future in all areas, they are more technologically advanced, more psychologically, emotionally and spiritually advanced, then they truly have some gifts to share with us. ∞

About the Author:

Linda Moulton Howe is a graduate of Stanford University, USA, and has a Masters Degree in Communication. She has worked as a science and environment reporter for radio and television, and edits the Earthfiles.com website. Her film documentaries, *A Strange Harvest* and *Strange Harvests 1993*, explored the worldwide animal mutilations phenomenon. Her books include *An Alien Harvest*, *Glimpses of Other Realities – Vol. I: Facts & Eyewitnesses*, *Glimpses of Other Realities – Vol. II: High Strangeness* (reviewed in NEXUS 5/05) and *Mysterious Lights and Crop Circles* (Paper Chase Press, USA, 2000–01, reviewed in 8/05). Over the years, Linda has contributed many articles to NEXUS, most recently in 11/01 and 8/05.

Linda's investigations have taken in such diverse subjects as crop circles, the *chupacabras* mystery, humanity's hidden history, and the evidence for UFOs and ETs, including research into the alleged Roswell UFO crash fragments and government knowledge and cover-up of non-human intelligences interacting with our planet. See her website, <http://www.earthfiles.com>, for further information.

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"None of the food here has been genetically modified, but some of the staff have."



REVIEWS

BOOKS

Reviewed by Ruth Parnell

SORCERER'S APPRENTICE:

My Life with Carlos Castaneda
by Amy Wallace

Frog Ltd/North Atlantic Books, USA, 2003
ISBN 0-58394-076-6 (421pp hc)
Availability: North Atlantic Books,
<http://www.northatlanticbooks.com>

The spiritual teachings of Yaqui Indian sorcerer don Juan, as told by his apprentice Carlos Castaneda, captured the attention of a generation of people who wanted to explore life's magic and mysteries. It didn't seem to matter too much whether don Juan actually existed or whether he was the figment of Castaneda's lively imagination.

Author Amy Wallace (daughter of best-selling novelist Irving Wallace) was among the adoring fans, and met Castaneda through her father in 1973 when she was seventeen. Their acquaintanceship continued over the years until she was finally drawn into the inner circle of his devotees in the early 1990s and became one of his lovers until a year before his death in 1998.

Sorcerer's Apprentice is Wallace's roller-coaster memoir of her life with (and after) Castaneda and the "witches" who made up his coterie, and it's not quite the tale of "impeccability" and "enlightenment" that might be expected. It's a warts-and-all account that takes the reader through the heights and depths of being in an unequal power relationship with a brilliant but flawed guru/philosopher who could be cruel and kind, abusive and loving, fraudulent and brutally frank. It's a morality tale that on the one hand is about the spiritual quest but on

the other is about jealousy, self-obsession and hypocrisy. Writing it was her way of settling the past and moving on in her life.

Wallace realised an important lesson that is applicable to us all: be true to our own power, and don't put others up on a pedestal and then submit to their manipulations.

AYAHUASCA: The Visionary & Healing Powers of the Vine of the Soul

by Joan Parisi Wilcox
Park Street Press, USA, 2003
ISBN 0-89281-131-5 (229pp tpb)
Availability: Inner Traditions website,
<http://www.innertraditions.com>

Experiencing the sacred Amazonian plant brew, *ayahuasca*, has become a popular pursuit among "underground" spiritual seekers, and this ancient sacred practice is indeed legal in its native Amazonia. This powerful, visionary concoction is not something that should be taken lightly; emetic episodes are often part of ingesting this potent biochemical drug, compounded by the effects of a DMT-rich catalyst plant that acts like a light to the power of ayahuasca.

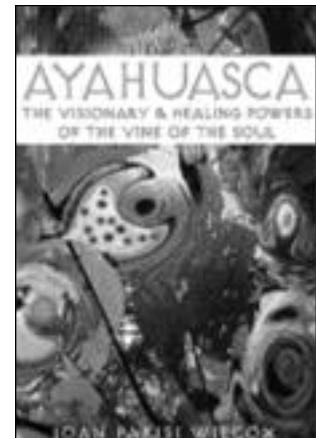
Author Joan Parisi Wilcox warns this tea should only be ingested under strict ritual conditions, overseen by an *ayahuasquero*, or healing master, who sings/plays the sacred songs, *icaros*, during the process. Anyone contemplating exploring this route must be sure of his/her intentions and not get stuck on psychic phenomena that may be part of the process. When experimenting with such a mind-expanding psychedelic as this, the explorer still needs to be grounded.

A former English literature academic and a professional writer, she is no stranger to shamanic traditions. Readers may remember her book, *Keepers of the Ancient*

Knowledge, about the Q'ero tribe of the Peruvian Andes (see review in 6/03).

Her introduction to plants with psychedelic qualities came in the USA in 2000, when she imbibed ayahuasca tea under ritual conditions. The protocols in the week leading up to the ritual were strict for good reasons, and included eating a very plain vegetarian diet and abstaining from sex. What Joan experienced with this "entheogen" was not just literally gut-wrenching but mind-blowing, to say the least. Ultimately, through this and other subsequent experiences in Amazonia, she got to the core of her deepest being, dispelling illusions and becoming one with the Vine of the Soul—a plant that is, in reality, a highly sentient being.

Wilcox's book is a record of her and her fellow travellers' visionary journeys and insights. The shamans would concur that if one is privileged enough to be able to tap into hidden experiential knowledge, there is a responsibility to share it around. Wilcox has fulfilled her mission admirably.



REVIEWS



THE BOOK OF FLOATING:

Exploring the Private Sea

by Michael Hutchison

Gateways Books and Tapes, Nevada City, CA, USA, 1984, 2003

ISBN 0-89556-118-2 (268pp tpb)

Availability: Gateways Books and Tapes, <http://www.gatewaysbooksandtapes.com>

Michael Hutchison did his first series of floats in a flotation tank in 1982 for an article he was writing for New York's *Village Voice* (13 July). Like so many others of his generation, he'd been inspired by Dr John Lilly's books and the film *Altered States*—and curiosity got the better of him.

Hutchison was so taken by the benefits of floating and encouraged by the testimony of other floaters that he spent a year researching the subject from scientific, medical and psychological perspectives, culminating in the 1984 publication of *The Book of Floating*. (During the 1990s he edited the seminal *MegaBrain Report*.) Two decades later, Hutchison's work is still relevant in his explanations of how flotation works, e.g., via brain waves, biochemistry, biofeedback, visualisation, and how floating can be used, e.g., for deep relaxation, pain relief, self-hypnosis, superlearning, improvement of athletic performance, weight loss and freeing oneself from habits and addictions.

The book has been reprinted but with a final chapter which Hutchison wrote in 2003—four years after he had a terrible fall that left him paralysed from the neck down. After a few months of hospitalisation he decided the only thing to help him through his ordeal was to enter into deep meditation, so before long he found he could get into the same state of "no mind" that he experienced in his most profound floating moments.

Now on the mend, he attests to a power of flotation that he'd not contemplated before—as a gateway to pure awareness, pure being, enlightenment, the eternal present, just as the spiritual sages describe.

Hutchison's story gives incentive to new recruits as well as lapsed floaters to get into the tank and go with the flow.

GENESIS OF THE COSMOS:

The Ancient Science of Continuous Creation

by Paul A. LaViolette, PhD

Bear & Company, USA, 2004 (first published in 1995 by Park Street Press as

Beyond the Big Bang)

ISBN 1-59143-034-8 (373pp tpb)

Availability: Inner Traditions website, <http://www.innertraditions.com>

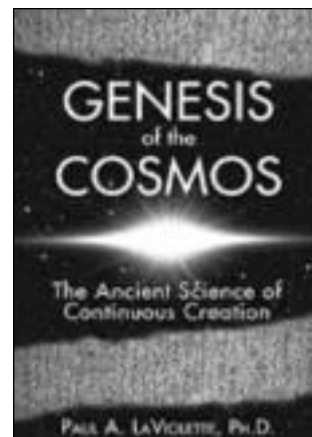
Dr Paul LaViolette is one of those rare scientists who dares to move across disciplines and make connections that others don't see so easily. After graduating in physics and systems science, he spent the subsequent years conducting research in astronomy, climatology, cosmology, geology, mythology and theoretical physics, among other subjects. He's written many papers touching on these fields, and several books including *Earth Under Fire* (1997) and *The Talk of the Galaxy* (2000) (see reviews in 5/02 and 8/02, plus article, "A Galactic Superwave Hazard Alert", in 8/02).

This edition is a re-issue of his 1995 *Beyond the Big Bang*, published a year after his *Subquantum Kinetics*—a new approach to subatomic physics based on chemistry, not mechanics, and process rather than static structure. While LaViolette was developing his theory in the 1970s, he came across the

Tarot and had the insight that it described the science of system genesis—the process by which ordered forms or systems spring into being—and was amazed to learn that modern systems principles were known thousands of years ago. *Genesis of the Cosmos* (and its predecessor) is his bringing together of ancient scientific wisdom that has been hidden in myths and folklore.

LaViolette says that the creation science of antiquity conceives all physical form (whether animate or inanimate) to be sustained by an undercurrent of process—a flux of vital energy that permeates all space.

He suggests that ancient systems of knowledge, including the *I Ching*, the Sumerian and Egyptian mysteries, the Tarot and astrology, encode a highly sophisticated science of cosmogenesis, though he concedes that not all traditions have the same degree of detail. Our 21st century cosmology can only advance by a paradigm change that involves reanimating this ancient knowledge, he argues in this cutting-edge classic.





REVIEWS

CROP CIRCLES:

Evidence of a Cover-up by Nicolas Montigiani

Carnot, USA, 2003 (first published in French as *Crop Circles, Manoeuvres dans le ciel*, Editions Carnot, Chatou, France) ISBN 1-4050-4103-X (197pp tpb)
Availability: **USA**—Carnot USA Books, <http://www.carnotbooks.com>; **UK**—Roundhouse Group, website <http://www.roundhouse.net>

French-American professional photographer Nicolas Montigiani proposes a very different theory on the formation of crop circles in this book. Before getting to the point, he succinctly reviews the history of cerealogy, the rise of cult, ufological and New Age groups as well as hoaxers, and the serious attempts made by independent researchers and scientists to analyse the phenomenon, e.g., studying the broken nodes of wheat stems. He dismisses hypotheses concerning hoaxers (except in a small percentage of cases), cosmic intervention, plasma vortex energies and Earth energy lines.

Instead, Montigiani's conclusion is based on the research of a French defence scientist (who uses the pseudonym, Jean-Paul Piton) that crop pictograms are the work of a secret British (and possibly joint US) military defence program—utilising a high-powered microwave (HPM) generator and cannon to direct the invisible energy beam to the field below according to pre-programmed instructions for the design. A balloon or dirigible could serve as a platform for reflecting the beam or producing it via an on-board generator. In his experiments, Piton directed laser beams and microwaves at ripening wheat and was able to duplicate the effects seen in crop circles using the microwaves.

Montigiani notes that HPM technology has been an open secret for decades, but suggests the British may have made significant advances with it that coincided with the increasing sophistication of the pictogram designs around 1990. It may be no coincidence that the majority of circles appear near military bases in the UK and, on a lesser scale, in allied countries.

This is another far-out approach that's sure to disturb not just the cosmically inclined.

PRIMARY PERCEPTION: Biocommunication with Plants, Living Foods and Human Cells by Cleve Backster

White Rose Millennium Press, Anza, CA USA, 2003
ISBN 0-9664354-3-5 (168pp tpb)
Availability: Websites <http://www.primaryperception.com>; Amazon.com

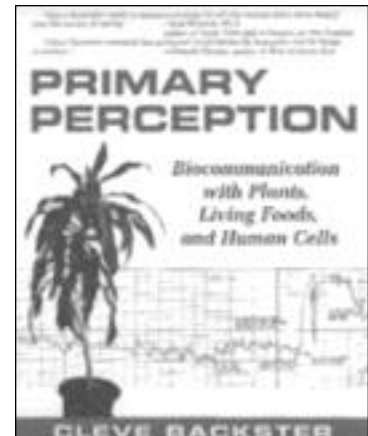
If you read *The Secret Life of Plants* (by Peter Tompkins and Christopher Bird) years ago, you may remember the opening story of Cleve Backster, who first attached a set of polygraph electrodes to a plant leaf in 1966 and thus initiated a revolution in our understanding of biocommunication.

Mr Backster is still going strong, and so is the *Dracaena* plant he tested all those years ago. So is his work in lie detection, and he still teaches at the school he founded in the early 1960s. At last, he's written his first book. It touches on his life story, and details many of his landmark experiments up to as recently as 2002. While he's had such an influence on our changing scientific paradigm, there's been all too little written about him and he remains an unsung hero—which is why we're running a rare interview this issue, conducted in 1997 by well-known

environment journalist Derrick Jensen.

Four years in the writing (due to new developments in the process), *Primary Perception* documents Backster's amazing discoveries of attunement in the cellular, microbial, plant and animal kingdoms to stimuli from humans and the surrounding environment. Who would think that a kom-bucha culture could react by going "off the chart" when Backster (briefly a CIA agent in the late 1940s and a hypnotist before that) was viewing a scene from the film *Conspiracy Theory* that alluded to CIA experiments in hallucinogens and sensory deprivation? After this, you'll never feel the same way again about the eggs, yogurt, acidophilus capsules and fresh fruit and vegetables held captive in your fridge, and you may be forced to reassess the "vibes" you give out in your everyday life.

Backster's pioneering biocommunication experiments are also adding to the evidence that confirms the advanced level of scientific knowledge and wisdom of the ancients.



REVIEWS



THE HOLISTIC HANDBOOK OF SAUNA THERAPY

by Nenah Sylver, PhD

The Center for Frequency, NY, USA, 2004
ISBN 0-9672491-7-1 (337pp tpb)
Availability: The Center for Frequency,
PO Box 952, Stone Ridge, NY 12484-
0952, tel +1 (845) 687 0963, website
<http://www.NenahSylver.com>

I hadn't realised the healing power of the sauna until I came across Nenah Sylver's handbook. Sauna therapy has been practised for thousands of years (a Mayan sweat house that's 3,000 years old was discovered a few years back), and for good reason. This therapeutic body-heating technique works up a sweat that helps eliminate toxins from the system. It also helps maintain good health and prevent onset of disease.

Sauna therapy has a strong cultural following in Europe, particularly in Scandinavia, and Sylver aims to win over those who aren't familiar with it or have some aversion to perspiration or nudity. (Dr Sylver is also the author of *The Handbook of Rife Therapy*, reviewed in 9/05, and the article on "Poisonous Products" which we ran in 7/02–03 under the name Nina Silver.)

Starting off with a look at the history of the sauna, Dr Sylver then explains the physiology of perspiration, how deliberate sweating can produce powerful results, and what sorts of compounds—biological wastes, heavy metals, organic chemicals—are released when we sweat. Types of heat—dry or humid—are discussed, as are the best materials and heating system to incorporate into a sauna chamber if you decide to build one. While she doesn't give construction plans, she provides photos and includes details in her extensive resources section.

Not everyone should take a sauna, though, and Dr Sylver summarises the medical conditions (e.g., some cardiovascular problems) which are contraindicated; she suggests readers check with a sauna-aware medical practitioner before proceeding. In the last chapter, her focus is on detox programs, some of which are used by doctors in the enviro-medical field. She's certainly convinced me of sauna's therapeutic benefits.

BUSHWOMEN: Tales of a Cynical Species by Laura Flanders

Verso/New Left Books, UK, USA, 2004
ISBN 1-85984-587-8 (342pp hc)
Availability: Verso Books, website
<http://www.versobooks.com>

This eye-opening book from San Francisco-based author, journalist and radio talk show host Laura Flanders shows up the complicity of various women surrounding George W. Bush in an agenda that's set to oppose all sorts of rights—whether for women, minorities, workers or the environment. The American public has been poorly informed on the background, vested interests and rise to power of these women, and Flanders lifts the veil of deceit.

The introduction, "Winning Women", explains the role of these women in bringing a female face to the Republican Party (attracting more women voters) and a Far Right Bush Administration whose brutal policies masquerade under the banner of "compassionate conservatism". Packed with alternative historical context and comment, *Bushwomen* leads with a brief analysis of Florida's Secretary of State Katherine Harris and her part in the 2000 election violations that swept George W. Bush to power.

Chapters are devoted to women who hold cabinet and sub-cabinet positions: National Security Advisor Condoleezza Rice, GWB's communications director Karen Hughes, Agriculture Secretary Ann Veneman, Labor Secretary Elaine Chao, Environment Protection Agency head Christine Todd Whitman, and Interior Secretary Gale Ann Norton. The final chapter, "Sisters", profiles Dr Lynne Cheney (wife of VP Dick), who headed the right-wing National Endowment for the Humanities from 1986 to 1993 and has played an influential social engineering role; and Laura Bush, whose espousal of Afghani women's rights was a cover that arguably served to justify more bombing.

Most of these high-profile "Bushwomen" have turned their backs on the very liberties that allowed them to get ahead, so there's a strong thread of hypocrisy through their eyebrow-raising stories. The sideline details Flanders gives also make this a must-read before the 2004 US presidential election!





REVIEWS

RETROCOGNITIONS:

An investigation into the memory of past lives and the period between lives by Wagner Alegretti

IAC, Miami, Florida, USA, 2004

ISBN 0-9702131-6-6 (295pp tpb)

Availability: International Academy of Consciousness, <http://www.iacworld.org>

This treatise is the territory of the serious seeker into metaphysical domains. It's the result of many years of study into psychospiritual phenomena, put together by Wagner Alegretti, a dedicated consciousness researcher who follows in the steps of Brazilian doctor/healer/seer Waldo Vieira. Since the 1980s he's been involved in organisations associated with Dr Vieira, most recently the International Academy of Consciousness (see NEXUS 11/03 for "Out-of-body Experience" by the IAC's Sandie Gustus, and also Twilight Zone 6/05).

The central theme of Alegretti's book concerns retrocognition: recollection of past lives on Earth and even on other planets, but also of time spent *between* lives and what all this can reveal about our true soul purpose and evolutionary potential in *this* life. The book focuses not on personal stories but on the theoretical framework that can help elucidate the intradimensional experiences that can be accessed as part of spiritual progress.

Alegretti says that as well as evolutionary benefits such as healing group karma, there are many therapeutic benefits possible from retrocognitive experiences, including remission of/relief from physical illnesses, help in overcoming traumas and phobias, and assistance with relationships. To aid us in self-retrocognitions, he outlines a number of preparatory steps and technical procedures that he recommends be followed.

This is not an easy read, even for those familiar with Western and Eastern descriptions of the psychospiritual realms. The terminologies, originating from Portuguese-language sources, require some getting used to, so the glossary and index are essential. Even so, with chapters titled Holosoma, Consciential Energy, Existential Seriality and Extraphysical Society, readers may feel challenged. This material is comprehensive and insightful and expands our understanding of the myriad layers of consciousness.

(Note that Alegretti and his IAC colleague Nanci Trivellato are speakers at the NEXUS Conference in Brisbane in September.)

SIGN LANGUAGE OF THE SOUL

by Dr Dale H. Schusterman

The Writers' Collective, Rhode Is., 2003

ISBN 1-932-133-05-4 (270pp hc)

Availability: Website

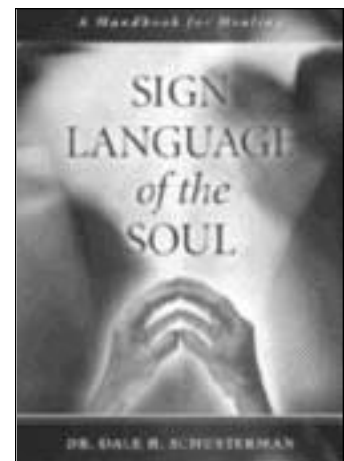
<http://www.SignLanguageoftheSoul.com>

Many years ago I came across a mind-expanding text on the esoteric science of *mudra*—the use of specific hand and finger positions and gestures to connect with the body's own energy flow—from the Buddhist perspective. To see it displayed in the iconography of Buddhist, Hindu and even Christian traditions was fascinating. Now I'm intrigued to find a healing-oriented approach that combines these Eastern gestures with mudras, symbols and words from the Jewish mystical tradition—especially the Tree of Life of the Kabbalah.

In *Sign Language of the Soul*, chiropractor and kinesiologist Dr Dale Schusterman reveals key aspects of this wisdom tradition and gives exercises, words and symbols for accessing and activating the pathways of the Tree of Life, the cosmic blueprint.

The mudras have meaning for the nervous system and the consciousness, and the fingers and their parts are associated with particular organs, glands/chakras and systems of the body as well as cosmic principles and elements of nature. Each hand/finger position (illustrated throughout the book and in the appendices) causes a specific stimulus in the nervous system and biochemistry as well as a change or movement in the energy systems that envelop the body. Because body, mind and soul are in fact one, the mudras can also awaken and stimulate different areas of consciousness.

This book will take some study for those unfamiliar with the Kabbalah, but the time taken will be worthwhile for the benefits this system of knowledge and self-healing can provide. Many of the balancing and healing exercises take only minutes to perform yet have profound, long-lasting results, as Dr Schusterman's patients attest in the case studies presented throughout the book.



REVIEWS



THE EARTH CHRONICLES EXPEDITIONS:

Journeys to the Mythical Past by Zecharia Sitchin

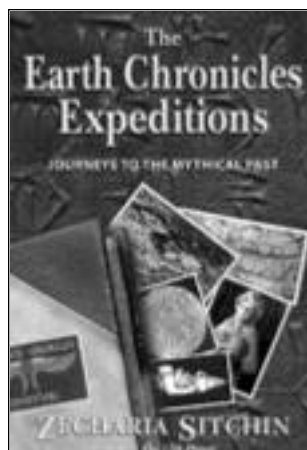
Bear & Company, USA, 2004

ISBN 1-59143-036-4 (243pp hc)

Availability: Inner Traditions website,
<http://www.innertraditions.com>

This new book from author/scholar of the ancient world Zecharia Sitchin is a record of expeditions he's led in the Old and New Worlds to explore ancient myths, examine anomalous artefacts and confirm that the gods of legend did physically visit the Earth. And while his conclusions are not always certain or even correct, due to lack of data on these artefacts, his research trails, fieldwork and ways of thinking about his findings are still trailblazing.

In travels from Mesopotamia and Egypt to Mexico, Sitchin makes connections which suggest either that trans-Atlantic routes were operating 5,000 years ago or that cosmic visitors flew across oceans and seas to impart



knowledge to several cultures at contemporaneous times in antiquity.

Sitchin dates the beginning of the Olmec "mother" civilisation of Mesoamerica to 3000 BC, and suggests the huge carved heads depict the Africans who accompanied the winged god Thoth after he left Egypt around that same time for the New World! Some of the Olmec carvings have uncanny similarities with images from ancient Sumeria that contain astronomical data.

Time travel tunnels under Jerusalem, UFO evidence on top of Mt Sinai, a Sumerian goddess-as-astronaut in the ancient city of Mari, and back-packing spacemen in Mexico are all part of Sitchin's territory. So, too, are ruins of Troy, Crete, Turkey and Syria. Each chapter focuses on a major mystery and includes illustrations, maps and photos (plus a big section of colour plates).

There's much food for thought and inspiration in these glimpses into lost history.

MOON LANDINGS: Did NASA Lie? by Philippe Lheureux

Carnot, USA, 2003 (first published in French as *Lumières sur la lune*, Editions Carnot, Chatou, France)

ISBN 1-59209-041-9 (211pp tpb)

Availability: **USA**—Carnot USA Books,
<http://www.carnotbooks.com>; **UK**—
Roundhouse Group, website
<http://www.roundhouse.net>

The controversy over whether NASA landed men on the Moon during the *Apollo* missions continues to this day. In *Moon Landings*, French computer specialist Philippe Lheureux presents more than 100 NASA photographs of these lunar missions containing anomalies and inconsistencies, and draws on the input of astronomers, photographers and other specialists to try to explain these discrepancies. After analysis, in most cases the unexplained elements remain: such as anomalous shadows, reflections and lighting; lack of dust on the lunar module's landing pads (when *Apollo 11* astronauts noted the landing had stirred up a lot of dust); and seemingly impossible bootprints and tyre tracks on the lunar surface.

Lheureux presents several hypotheses about the photos: e.g., that they are real; they were touched up for PR purposes; they were redone in the studio because the originals were somehow spoiled in the first mission; they were faked in a top-secret base in Arizona, and the astronauts only orbited and did not land on the Moon; and that NASA could not reveal what the astronauts saw (i.e., the Moon already colonised by ETs). These hypotheses need more back-up evidence, but Lheureux has no hesitation in stating his preferred versions. However, he leaves it up to readers to draw their own conclusions and do their own research.

The UFO question is given some space, starting with an alleged ham radio recording of Armstrong and Aldrin talking to Houston about the "visitors" and "spaceships" they saw shortly after they "landed" on the Moon. There's also discussion of NASA's strange emblem for the *Apollo* missions, featuring a rocketship leaving Earth and passing in front of the constellation Orion before landing on the Moon. Also discussed are transient lunar phenomena, seen by telescope long before the *Apollo* missions, which could be natural events or perhaps the result of ET activity. Finally, we're shown anomalous features on the lunar surface that are suggestive of artificial creation (some craters are shaped like triangles and polygons) and even the presence of ET military bases!

Maybe we'll get to the bottom of these mysteries one day. Meantime, scientists should not dismiss these anomalies but investigate them with an open mind.



REVIEWS

THE EMERALD MODEM

by Richard Leviton

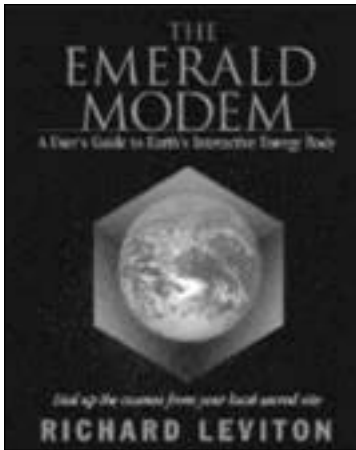
Hampton Roads, USA, 2004

ISBN 1-57174-245-X (592pp tpb)

Availability: Hampton Roads Publishing Company, <http://www.hrpub.com>

In *The Galaxy on Earth* (reviewed in 10/03), visionary author Richard Leviton introduced us to sacred sites and landscape features around the globe within the framework of a metaphysical matrix. In *The Emerald Modem*, he reveals more specifics about the Earth's interactive energy body and how we are inherently linked to it and the cosmos, even if we don't realise it.

Apparently the planet is designed to be interactive, even to require us to interact with it, and Leviton has identified at least 85 different features of the Earth's energy body which he says are the Earth's subtle "organs" and can serve as instruments for raising human consciousness.



To Leviton, the world's sacred landscapes are teeming with geomythic features, meaning that the myth, a real event, actually happened at the site. When seen through clairvoyant eyes, the landscape, the mythological realms and the cosmos are dynamically present and linked via a universal energy code.

The planetary structure can be seen as an etheric geometric crystal with energy pathways and sacred sites at intersections. These serve as access points, akin to Chinese acupuncture points or even an Internet computer modem, where we can plug into the power of the Earth's energy grid—and we can do so because we are designed according to the cosmic energy matrix. Leviton suggests we need to reestablish our link so we can liberate the original Light-bearer, Lucifer, turn on the global Emerald modem and tune into the galaxy.

This highly esoteric book is also a journey through some of the world's great mythologies and systems of knowledge, including Greek, Egyptian, Arthurian, Kabbalistic and

Vedic. Leviton gives keys and meditations for tapping into the Earth's power and deepening our link with the planet and her mythical dimensions at these sacred places. We can even learn how to plug in without physically having to be at the sites! This book is definitely in the "out there" category, yet is firmly centred "in here", in the heart.

EXOPOLITICS: Political Implications of the Extraterrestrial Presence

by Michael E. Salla, PhD

Dandelion Books, Tempe, AZ, 2004

ISBN 1-893302-56-3 (268pp tpb)

Availability: Dandelion Books, website <http://www.dandelionbooks.net>

The extraterrestrial presence in all its forms is with us, so information about it should be publicly disclosed and its political and social ramifications openly discussed. So argues Michael E. Salla, PhD, researcher in residence at the American University's Center for Global Peace, in *Exopolitics*. This former Assistant Professor in the university's School of International Service has gone out on a limb despite the negative reactions from his academic peers to his thesis on ET presence on this planet.

With a background in international politics, policy-making and conflict resolution, Dr Salla posits that the existence and influence of ETs is at the core of international and domestic conflict, yet this is completely overlooked by conventional policy-makers, who thus make decisions based on false premises. It's time for 70 years of official non-disclosure, disinformation, intimidation and tampering with evidence to be overturned—and the study of exopolitics is relevant for how we'll cope with the revelations.

Dr Salla discusses the history of the UFO/ET cover-up, particularly in the USA, as well as the various "conspiracy theories" that abound and present a challenge to policy-makers and politicians. He delves into the legacy of Nazi Germany and its links with ETs and subterranean civilisations, suggesting that the Nazis during WWII set up secret bases in Antarctica and South America—bases which still exist!

He draws on the testimony of insider whistleblowers, several of whom have worked and/or communicated telepathically with aliens. Many of the names will be familiar from the pages of NEXUS. In fact, regular readers may remember Dr Salla's article on the alleged Iraqi Stargate, published in NEXUS 10/03. In his book, he looks further into the search for ancient ET/UFO technology as a prime motivation for the US-led war on Iraq.

We need to prepare for open interaction with ETs, and Dr Salla argues for having policies to facilitate this new openness.

REVIEWS



VIDEOS

Reviewed by Duncan Roads

EXPRESSIONS OF ET CONTACT: A Visual Blueprint? (Revised 2003 Edn)

Produced by Bradley De Niese; directed by Mary Rodwell, RN, Australia, 2003
Format/running time: all formats, 52mins

EXPRESSIONS OF ET CONTACT: A Communication & Healing Blueprint?

Produced by Bradley De Niese; directed and narrated by Mary Rodwell, RN, 2004
Format/running time: all formats, 81mins

Prices: \$35.00 each (includes GST + postage in Australia; for overseas prices see website, <http://www.maryrodwell.com>)

Availability: Mary Rodwell, 33 Watsonia Road, Gooseberry Hill, WA 6076, Australia, tel/fax +61 (0)8 9454 3702; or try the nearest NEXUS Office

Steering a path through the minefield of UFO "politics" (or beliefs, should I say), is never easy if you want to stay friends with all the various factions. In the "abduction" field alone, there are those still angry at the idea that ETs abduct and experiment upon us without consent. This anger, I notice, tends to colour their views of the experience and is based upon the feeling of being powerless in these situations.

However, there is another, more broad-minded, viewpoint where the experiencer or abductee (eventually) handles the situation without trauma, feels more able to "control" the experience, and often ends up receiving practical information. One of the interesting aspects of those in this category is that two-way communication of a less-impaired nature can often occur. This is something that seems to result over time, especially for those whose experience was a rude interruption to reality. However, there are those who have been interacting with other beings/aliens/ETs since birth (maybe even before?), as you will see on these videos. These people don't necessarily have the trauma and, accordingly, they are able to receive and convey some remarkable information.

These *Expressions of ET Contact* videos are two of the most amazing documentaries you will ever watch. I don't count myself as being a "sensitive" person at all, but I can assure you that I felt things "shifting inside of me" as I watched the videos. In fact, at least 15 minutes of one video that I watched I don't remember a thing about!

I am sure viewers will also be surprised at the large number and variety of different life-forms visiting and interacting with us. It

becomes clear that as contact between "us" and "them" progresses, more and more information is being transmitted.

Amongst the many people featured by Mary Rodwell in these documentaries, most are currently of the opinion that there are many life-forms "out there" that are trying to assist humanity—now, more than ever. This assistance can take many forms; however, it is obvious that most of the assistance is via information packets transmitted to "us". It is up to us to decide what to do with the information. Some use it for healing, as in the example of Adrian Dvir, the Israeli scientist working with an ET medical team (see *Twilight Zone*, NEXUS 11/02, and book review in 10/06); others receive technical or mathematical information that is way above their personal understanding.



Yet obviously it is still early days in the "getting to know you" process, so a lot of the information relayed to humans is still very basic, i.e., what "they" look like, what "they" are like, and how our "reality" is but one of zillions of valid but different realities.

The interviews are *most* interesting and compelling. And the artwork "does things" to you when you look at it. The paintings of the ETs or aliens ("beings" is probably the better word) are just rivetting. One gets the "feeling" of what the being is "like" just by looking at these paintings—a result of the extra information packets transmitted to the artist, perhaps? The accompanying music is very well selected/inspired to suit the amazing artwork and graphics.

These videos are definitely not for conspiracy buffs. No smoking guns, nothing to determine goodies from baddies or who their New World Order contacts are, and angry anti-shapeshifters may also come away disappointed. Instead, these videos are more in the category of "spiritual awakening", but this is a *result* of the content and (probably) not the intention of the producers.

Highly recommended viewing!



REVIEWS

MUSIC

Reviewed by Richard Giles

BOWMBOI

by Rokia Traoré

Tama Records, Australia, 2003 (60mins)
Distributors: **Aust/NZ**—MRA
Entertainment, tel +61 (0)7 3849 6020;
UK—Indigo Records, website
<http://www.rokiatraore.net>

The country of Mali has produced some wonderful artists, and Rokia Traoré is no exception. Her voice is rich in the spell-binding sound of an artist who has mastered her field. With *Bowmboi*, her third album, she won the Critics Award for 2003 Album of the Year in the BBC Radio 3 World Music Awards. Rokia uses traditional instruments and approaches to carry her strikingly original songs. The words are full of messages of hope and comment on the human condition. A mesmerising voice with an amazing range, touching the heart.

WORLD REGGAE

by various artists

Putumayo, USA, 2004 (54mins)
Distributors: **Aust**—MRA Entertainment,
tel (07) 3849 6020; **UK**—Pinnacle
Imports, tel 01689 870622; **USA**—
Putumayo, tel 1888 7888 8629, website
<http://www.putumayo.com>

No self-respecting record collection would be complete without CDs of the relaxed, rhythmic music of reggae. And if you thought reggae was only found in Jamaica, think again! Putumayo has released a collection of offerings from reggae bands around the world with this new album. It includes groups from France, India, Algeria, Brazil, Nigeria, UK, Ivory Coast and Cameroon. The irresistible, rocky sounds of swaying music and lyrics of social commentary make this a must.

TAIKO TO TABLA

by Joji Hirota and Pete Lockett

Arc Music Productions, East Grinstead,
West Sussex, UK, 2004 (58mins)
Distributors: **UK**—Arc Music, tel +44
(0)1342 328567, website
<http://www.arcmusic.co.uk>

Pete Lockett is one of the more versatile percussionists in Europe, having worked and toured with dozens of top bands. His background in percussion from the Indian, Brazilian, Cuban, African and Celtic traditions gives him diverse skills. Joji Hirota, whose talents are in Japanese percussion and shakuhachi, has played at various WOMAD festivals over the years. Together the two of them produce and play an amazing array of

percussion instruments in a wonderful fusion of world music. A memorable album of intricate percussion.

INCENDIO

by Incendio

New World Music, USA, 2003 (51mins)
Distributors: **Aust**—New World Music,
tel (02) 9565 4522; **UK**—New World
Music, tel +44 (0)1986 781682; **USA**—
New World Music, tel (303) 415 1040,
<http://www.newworldmusic.com>

Passion and fire are at the heart of Spanish guitar, and this self-titled album from Incendio means "fire" in Spanish. The sounds of up-tempo Spanish guitar come from Jim Stubblefield with Jean-Pierre Durand and Liza Carbe, who also plays bass and synthesiser. Liza and Jean-Pierre also produce and engineer the album. This is very modern Spanish with some fast flamenco as well as songs of dreamy, romantic Spain. Charlie Bisharal does marvellous violin on two tracks. If you enjoy good, foot-stomping Spanish music, you'll love tapping your heels to *Incendio*.

COMFORT ZONE

by Ian Cameron Smith

Rhythmist Productions, Harbord, NSW,
Australia, 2004 (61mins)
Distributor: Rhythmist Productions, tel
+61 (0)2 9939 6517, website
<http://www.iancameronsmith.com.au>

Ian Cameron Smith is back with another album and has made the leap into a newer field for him: a smooth jazz guitar sound and a touch of blues mixed with his own signature, liquid grooves. There's some very relaxed piano courtesy of Yen Wyndancer and cool sax by Blaine Whittaker and Macdonald Hamilton. Ian's guitar work is very laid-back, and his album would find its perfect niche on a cosy evening with good wine or for a quiet party with friends. Thoroughly recommended.

