



# The North Texas Skeptic

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## That voodoo that you do

*[From the March 2000 issue of APS News]*

Skewering practitioners of so-called “pseudoscience” is a perennial hobby for APS director of public affairs Robert Park, and many of his favorite targets are featured in his first book for a general audience, due out this spring from Oxford University Press. Three years in the making, *Voodoo Science* seeks to debunk many of today’s most foolish and fraudulent scientific claims: magnetic therapy — whose sales topped \$2 billion in 1999 — cold fusion, the Podkletnov gravity shield, free energy, and movements to build colonies in space, such as the notorious L5 Society. In the process, Park seeks to answer such questions as how otherwise respectable scientists can end up committing scientific fraud; how our evolutionary heritage makes us want to believe in an era when belief is a hindrance rather than a protective mechanism; and how the public can better distinguish pseudoscience from genuine breakthroughs.



**Robert Park (right) confronts an exponent of voodoo science (left)**  
Mask from <http://www.whimseys.net>

Not surprisingly, many of the pseudoscientific examples detailed in the book are drawn from Park’s prolific activities on behalf of the APS Office of Public Affairs, based in Washington, DC. In 1999 alone, he made 11 television appearances and 17 radio appearances on subjects ranging from Ballistic Missile Defense and polygraph testing to alternative medicine, space exploration and creationism. He also authored four opinion pieces for the *New York Times*, two full-page stories for the

Washington Post, and delivered eight speeches or colloquia around the country — all in the name of educating the public about pseudoscientific foolishness and occasionally outright fraud.

In some cases, his efforts even resulted in government action. For example, when USA Today carried a full-page ad for the mysterious “Vitamin O,” Park was the first to expose the product as nothing more than a solution of salt water in his weekly electronic newsletter, “What’s New.” A subsequent interview on National Public Radio raised enough public pressure to cause the Federal Trade Commission to investigate. Last March the FTC charged the supplier with fraud and ultimately closed the company down. Similarly, Park’s efforts to expose the fraudulent claims of free energy schemes — a movement which has achieved nearly cult-like status — led to the removal of State Department sponsorship of a free energy conference last April, and an investigation of the Patent and Trademark Office, resulting in the dismissal of the U.S. patent examiner who organized the conference.

And for all those pseudoscientists fond of citing Newton and Galileo as similarly misunderstood role models, Park has a typically pithy rejoinder: “It is not enough to wear the mantle of Galileo: that you be persecuted by an unkind establishment. You must also be right.”

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## Voodoo science: The road from foolishness to fraud

by **Robert L. Park**

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Tentative date for publication: May 2000.

Reviewer — Dr. Eugene F. Mallove, Editor-in-Chief

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This review is of a pre-publication galley proof sent to Infinite Energy with a press release on Oxford University Press letterhead mocking cold fusion.

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— **Part One** —

Historians of science may well look back on this book as a dying ember from the funeral pyre of late twentieth century establishment physics, which hurtles toward a supposed “theory of everything,” while being blissfully ignorant of profound cracks in its very foundations. But author Robert L. Park, a physics professor at the University of Maryland, is now riding high. For some years he has been the darling of editors seeking crisp commentary from the chief representative of the American Physical Society (APS), a position he has held since 1982.

Whether railing against manned spaceflight, anti-ballistic missile defense, alternative health care, ESP research, UFO investigation, or his favorite whipping topic, cold fusion, you will find Robert Park in top mud-slinging form on the Op Ed pages of The New York Times and The Washington Post, among others. His politicized weekly “What’s New” internet science column ([www.aps.org/WN](http://www.aps.org/WN)) is remarkable in that it is tolerated at all by the APS. Especially since Park, with insufferable chutzpa, ends each column with a fake disclaimer: “Opinions are the author’s and are not necessarily shared by the APS, but they should be.” That’s pure Park, who hopes that his audience will come to see the world through the filter of

the scientific certainties that he and many of his arrogant physics colleagues claim to possess.

Dr. Park has now compiled his wisdom in a short volume, in which he claims to have discovered a new kind of science — “voodoo science” — the title of his book. His definition of voodoo science is encapsulated in the subtitle, “The Road from Foolishness to Fraud.” There is a progression from “honest error” that evolves “from self-delusion to fraud,” he says. Further elaborating the definition: “The line between foolishness and fraud is thin. Because it is not always easy to tell when that line is crossed, I use the term voodoo science to cover them all: pathological science, junk science, pseudoscience, and fraudulent science.”

This is how he says he discovered voodoo science. In the course of his PR work for the APS he “kept bumping up against scientific ideas and claims that are totally, indisputably, extravagantly wrong.” He is that certain, three adverbs worth, that many of the things he calls voodoo science cannot be right. More often than not, he draws his conclusions from fundamental theory that is supposedly sacrosanct. Therein lies the fundamental failure of Park and so many of his colleagues in the physics establishment. They have abandoned what little curiosity about scientific experiments that they may have had at the beginning of their scientific careers: they attack data from experiments that at first glance appear to be in conflict with theory, about which they have concluded one of two things: 1) The theory can’t possibly need fundamental modification, which might allow the phenomenon to occur or 2) It is inconceivable that existing theory can be applied to allow the phenomenon. It takes a special kind of arrogance to conclude affirmatively on both those points, particularly when both experimental data and theory for an anomalous phenomenon trend strongly against the doubters, cold fusion being a prime example.

Park thinks he knows what he and the physics establishment are doing, but he does not. He writes, “. . .no matter how plausible a theory seems to be, experiment gets the final word.” For Park, theory rules which experiments he will even look at. Revealing complete ignorance of the bloody battles over paradigm shifts in science (of the very kind he is obstructing!), Park claims, “When better information is available, science textbooks are re-written with hardly a backward glance.” Baloney!

In Voodoo, Park dismisses cold fusion at its very first mention, referring to it as “the discredited ‘cold fusion’ claim made several years earlier by Stanley Pons and Martin Fleischmann.” He says that a “dwindling band of believers” continue to gather each year “at some swank international resort” in an attempt to “resuscitate” cold fusion. He asks, “Why does this little band so fervently believe in something the rest of the scientific community rejected as fantasy years earlier?” He speculates later, “Perhaps many scientists found in cold fusion relief from boredom.”

Park works himself up about cold fusion throughout the book and tells us what he really thinks of cold fusion: “On June 6, 1989, just seventy-five days after the Salt Lake City announcement, cold fusion had clearly crossed the line from foolishness to fraud.” He states that Fleischmann and Pons “exaggerated or fabricated their evidence.” (He only speculates whether cold fusion researcher Dr. James Patterson of Clean Energy Technologies, Inc. may have “crossed the line from foolishness to fraud.”) He complains that no helium-4 results were forthcoming from Fleischmann and Pons by June 1989, ergo, cold fusion is a fraud. Since at least 1991, Park has been informed by fellow APS scientists, such as Dr. Scott Chubb, about helium-4 detection in cathodes and in the gas streams of cold fusion experiments. These independent experiments have been published in the U.S. and Japan in peer-reviewed journals. There is no doubt that Park knows this. Voodoo contains no mention of this data, an egregious fraud by Park on journalists and the general public.

Park has not troubled himself to study the very data which he demanded many years ago as proof of cold fusion, e.g. the helium-4 nuclear ash data, even after this data made it into the peer-reviewed literature. “You don’t have to worry about the heat if there is no helium,” was his statement to me in the spring of 1991, recorded in my book, *Fire from Ice*. On June 14, 1989, in the *Chronicle of Higher Education*, Park opined, “The most frustrating aspect of this controversy is that it could have been settled weeks ago. If fusion occurs at the level that the two scientists claim, then helium, the end product of fusion, must be present in the used palladium cathodes.” Apart from his gross error of ignoring the helium that might be in the cover gas coming from surface reactions (such cold fusion helium had been detected in 1991 and later), it is notable that Park has never mentioned any of the published literature on helium in cold fusion experiments.

On the issue of cold fusion Park has traveled, in his lexicon, from foolishness to fraud. Though he has not troubled himself with inconvenient facts, such as experimental evidence of robust character that supports cold fusion, he states preposterously: “Ten years after the announcement of cold fusion, results are no more persuasive than those in the first weeks.” He rewrites cold fusion history with ludicrous bloopers designed to entertain: “How, I wondered, could Pons and Fleischmann have been working on their cold fusion idea for five years, as they claimed, without going to the library to find out what was already known about hydrogen in metals?” Electrochemist Fellow of the Royal Society Martin Fleischmann not knowing a lot about hydrogen in metals? A bit much to suggest, even for an unethical obfuscator like Park. Park is the one who should have gone

to the library. He would have discovered that leading cold fusion scientists like Fleischmann and Bockris wrote the textbooks about hydrogen in metals. Fleischmann's outstanding research in this area earned him a Fellowship in the Royal Society, arguably the world's most prestigious scientific society. In other contexts Park claims allegiance to established theory and the expertise of leading authorities; in this case, he does not even realize who the authorities are.

*Read Part Two of this book review in the May issue of The North Texas Skeptic — Editor*

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## Web news

by **John Blanton**

*[The Web is probably the least reliable source of information. But it's free.]*

### **Dowsing for landmines**

*Warning: Don't try this at home.*

John Living (<http://mypage.direct.ca/j/jliving/landmine.htm>) explains it all (almost):

Dowsing is an old skill, and Pendulums have been used to locate mines by a number of military authorities. The author was trained in dowsing as an officer at the School of Military Engineering, Chatham, and has since improved the basic skills.

Most people can learn how to dowse using a Pendulum; the basic skills are getting answers to questions and locating objects. Any person seeking to find mines by dowsing must first become proficient in these skills.

Mines can be located both from a distance and close at hand. To find mines that are close to you can be most dangerous - but the risks are far less to a trained person than to an innocent child.

Training and experience, however, are not sufficient in such a dangerous exercise; the seeker must be aware of the mental conditions required and be able to prepare and control his thoughts and attitudes to ensure success in safety.

This paper outlines a method to train volunteers to dowse with a Pendulum, and to get their mind attuned to enable them to locate anti-personnel land mines in safety. The disposal of located mines is NOT covered.

After that bit of cautionary advice, JL (I can't keep writing "John Living" with a straight face) provides his readers with all the necessary information on how to select and use the proper pendulum or bobber and how to select the right materials for marking the located mines. He has neglected to mention it is not necessary to buy a large quantity of this mine marking material.

I won't go into JL's detailed instructions for dowsing for mines, because I don't want to become part of the chain of evidence when the first lawsuits start rolling in. However, I will pass on to our readers one critical detail he does provide:

When the Lead Dowser has gone about 20 yards (20 metres) the next dowser starts; this is so that if a mine is exploded by one dowser, the next dowser will not be seriously injured.

Of course, it goes without saying that the "next dowser" now becomes the Lead Dowser. And finally, some more useful advice:

When the mines in the search area have been marked, the removal team can move in, making certain that they leave a safe distance between each other — and the dowsers.

JL mentions more than once the necessity of concentrating on the task at hand. I have heard "The prospect of being hanged in

a fortnight can focus the mind wonderfully.” I don’t remember who said that, but this seems to be an activity that will hold your attention equally.

## BioElectric Shield

Chiropractic is not all back massage. Check out Dr. Linda Rae Savage’s Web site at <http://www.aubergines.com/drsavage/products.html>:



The BioElectric Shield is a beautiful necklace designed to protect you from the dangers of EMF radiation and other persons’ negative energies. The shield is composed of a matrix of precision cut crystals enclosed in a precious metal case which is based upon an ancient Tibetan design. The crystals are laid out according to Nobel Prize winning physicist William Bragg’s mathematical formula, Bragg’s Law. The shield balances and strengthens your natural energy field in two ways: first by redirecting energies that bombard you from the environment, and secondly by reinforcing your own natural energies and aura. Medically tested on over 12,000 people, the shield has proven to be as effective as it is beautiful. Prices vary based upon style chosen. Available in silver or gold.

## Did ancient Egyptians travel to other planets?

Weekly World News (<http://www.weeklyworldnews.com/>) reports on the book *Martian Genesis* by Herbie Brennan (Piatkus Publishers, London).

Scientists have discovered startling proof that pyramids have remarkable physical properties—including the ability to generate static electricity—and can cause people who lie down inside to feel their souls leaving their bodies.

“One must wonder if there is something about the Great Pyramid designed to stimulate out-of-body experience,” writes Brennan.

The discovery by NASA of the face on Mars in 1976 has caused experts to remark on the resemblance of the face with the Sphinx of Egypt, WWN continues. It is possible Martian and early human civilizations interacted. How is not well understood.

Historians know that the Egyptians had a complex view of the human soul, believing that a part known as the Ka could actually leave the body and travel the universe.

“It was thought of as a mirror image of the physical body, but composed of finer matter,” writes Brennan.

The Great Pyramid, built as a tomb for the Pharaoh Khufu, was specifically designed as a “launching pad” to propel his Ka into space, according to Egyptian literature.

“It was aligned to the constellation Orion so that the soul of the dead pharaoh might travel accurately and safely to join this heavenly body of stars,” Brennan writes.

He further notes that the mysterious lights that appear on the apex of the Great Pyramid are caused by static electricity, which removes a little of the mystery.

In addition, the shape has been shown to generate a mysterious force known as psychotronic energy. Karel Drbal, a radio engineer from Prague, made tiny models of the Great Pyramid and found they created enough of this energy to somehow sharpen razor blades placed beneath them. Such evidence of very real paranormal effects, “gives a new perspective on why Khufu elected to have his launch pad to Orion constructed in the shape of a pyramid,” Brennan says.

According to Brennan, English author Dr. Paul Brunton performed an experiment to test the pyramid’s powers in the early 1930s. He spent a night alone in the King’s Chamber. Stretched out on the floor in the darkness he had an out-of-body experience in which he felt he passed upwards through a narrow hole.

Dr. Brunton wisely returned to his physical body. But he felt that had he wished, he could have gone anywhere—including the stars or any of the planets!

I may be skeptical, but that's good enough evidence for me.

## Misplaced candor

Jerry Goodenough ([j.goodenough@uea.ac.uk](mailto:j.goodenough@uea.ac.uk)) has posted the following on the Skeptics list server:

Strange things are happening with one of Britain's most famous/notorious tabloid astrologers. Jonathan Cainer was poached from the gullibility-prone Daily Mail to the re-vamped Daily Express in a headline-making move, the new management apparently paying him a salary of something like 200,000 pounds a year plus a 50% share in the amazingly lucrative horoscope telephone lines that accompany their daily column.

But Cainer is an odd character apparently given to occasional bouts of uncontrollable honesty. Eva has already passed on some details from an interview he gave at the time of his 'transfer'. Now he writes in a column in the Express itself:

"Wherever possible, astrologers avoid making specific predictions about particular events. We find it a lot safer to be vague. This allows us to claim credit when it suits us - and it gets us off the hook if we have misread a horoscope... Out of respect to tradition, I always make a point of speaking in riddles or of burying my very best prophecies in a set of casual, seemingly off-hand remarks."

It would be interesting to know whether this naked burst of candour will discourage any of the Express readers who phone their astrology Zodiac lines at 60p a minute, or those prepared to send in 21pound 99 for a full personal horoscope. I guess JC probably thinks it won't make a blind bit of difference....

[Incidentally, the columnist who passes on this tit-bit says it all reminds him of the Punch cartoon captioned: In a major breakthrough for the science of astrology, all people born under the sign of Scorpio were yesterday run over by egg lorries.]

## Homeopathy—Dilute And Heal

An item from the online Wired News (<http://www.wired.com/news/technology/0,1282,33749,00.html>) explains the secret behind homeopathy. Andy Patrizio writes

With a little help from a scientist looking for a way to clean car engines, a physician believes he can explain the confounding paradox behind why homeopathic medicine gets more potent as it's diluted.

The problem for homeopathy (in the minds of skeptics like us) is that the active ingredient, aspirin for example, is first mixed with water. Let's say a 1% solution is made.

So far, so good. Then some of that 1% solution is taken (I guess the rest is thrown away) and diluted again 1%. This goes on many times. Do a little math. The dilution can become 1 in  $10^{100}$  and more. That means you might have one molecule of the original ingredient for every  $10^{100}$  molecules of water. But wait. Eighteen grams (2/3 of an ounce) of water has only about  $6 \times 10^{23}$  molecules. You would have to take a lot of the homeopathic remedy to have a shot at that last molecule of the active ingredient. Either homeopathy is bunk or something weird is going on here.

Dr. Bill Gray, author of Homeopathy: Science or Myth explains how this works.

"The point is, now that modern research shows that water that's prepared homeopathically is altered in its structure, this water does actually alter tissue cultures, organ function, and entire animals," said Gray, who has been practicing homeopathy in the San Francisco Bay Area for 29 years.

Validation of the dilution process came in a roundabout way, thanks to research by Shui Yin Lo, a former visiting associate professor in the chemistry department at California Institute of Technology. Lo was performing experiments on how to improve car engine efficiency when he made the discovery. Lo, who now is the director of research and development at American Technologies Group found that water molecules, which are random in their normal state, begin to form a cluster when a substance is added to water and the water is vigorously shaken—the exact process homeopaths use to create their medicine.

Lo said every substance exerts its own unique influence on the water, so each cluster shape and configuration is unique to the substance added. With each dilution and shaking, the clusters grow bigger and stronger. This water, which homeopaths call “potentized,” is considered “structured water,” because the water molecules have taken on a shape influenced by the original substance.

The clusters start to assume a form that mimics the structure of the original substance itself. So even though the chemical can no longer be detected, its “image” is there, taken on by the water molecules.

“If these clusters were unique to the original solute, and the observations are true that they can perpetuate themselves the more they are diluted or shaken, then the original material becomes irrelevant,” Gray said.

The American Medical Association declined to comment on Gray’s book or on homeopathy or alternative medicine. An AMA spokeswoman indicated they don’t want to talk about one alternative therapy over another.

Dr. Richard Sarnat is a medical doctor and president of Alternative Medicine Inc. He reminds us the theory of clustered water is not new, but Gray’s book could help explain how homeopathy works.

“I think year by year, these types of ideas are more readily accepted into the medical community as a whole,” Sarnat said. “Acupuncture in the 1960s was considered voodoo. Given the full range of things we’ve researched in alternative medicine, [electromagnetics] is no bigger a stretch than any other phenomenon under investigation.”

Bad news! Acupuncture is still voodoo. See the rest of this newsletter.

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## Notices

### **NTS loses one family name**

Ginny Vaughn is no more. As of April 1 she is Ginny Barnett. We saw it live on the Web from the Little Chapel of the Flowers in Las Vegas.

Congratulations to Ginny and Danny!

— John

The North Texas Skeptics now has its own domain name on the Internet. Look for us at <http://www.ntskeptics.org>

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## Skeptical Ink



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