



National Capital Area SKEPTICAL EYE

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"Unsolved Mysteries" Focuses on Virginia's Sleeping Prophet

By Elena M. Watson

Virginia's "Sleeping Prophet," Edgar Cayce, is the subject of an episode of NBC's "Unsolved Mysteries," the TV show that has already showcased such wonders as the Gulf Breeze UFO photos of Ed Walters, and England's phantom wheatfield circles. As reported in the *Virginian-Pilot* for January 30, the TV crew was in both Norfolk and Virginia Beach filming dramatic re-creations of Cayce's life for the 15-minute segment. The program which aired on March 20 concentrates on Cayce's reputation as a "psychic diagnostician," who earned his nickname by making medical diagnoses while reclining in a trance.

Five different time periods, from 1890 until the present, were re-created for the show. Local actors and D. D. Cayce, a look-alike cousin from Hopkinsville, Kentucky, portray the psychic, who died in 1945. Seventy-two-year-old Edgar Evans Cayce, son of the prophet, narrates the segment.

Support for claims of medical cures divined by Cayce is provided by an interview with a New Jersey chiropractor, Joe Pagano, who has been sharing the remedies with patients for 30 years. He admits they don't work in all cases, but one patient, also interviewed, claims to have regained eyesight after using a Cayce cure.

The remedies themselves are often bizarre: applying mashed potatoes to the eyes for blindness, or taking three almonds a day to prevent cancer. He also recommended a lot of hot broths, and vile-sounding concoctions made from roots and bark.

The Association for Research and Enlightenment (ARE) in Virginia Beach has on file 14,000 of Cayce's readings, which treat everything from medical problems to the lost continent of Atlantis. Run by Cayce's grandson, Charles Thomas Cayce, ARE is a nonprofit organization devoted to the prophet's spiritual teaching, a combination of Christianity and Eastern mysticism.

The director of the "Unsolved Mysteries" segment, David Vassar, was quoted in the *Pilot* as saying that they were not approaching Cayce's story as believers, but viewed it "as a phenomenon that is very mysterious." He further found Cayce's medical knowledge difficult to explain. Likewise, segment producer Kris Palmer was quoted saying, "Cayce had this psychic ability to determine why people felt the way they did physically or emotionally." Such statements indicate that the series' producers didn't make much of an effort to solve this mystery.

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Lucian and Alexander: Debunking in Classical Style

By Walter Rowe

In the year A.D. 164 a middle-aged gentleman paid a visit to the town of Abonuteichos on the southern coast of the Black Sea. That he was an important personage was shown by his escort of two Roman soldiers. He had come to meet the most prominent citizen of Abonuteichos: the Prophet Alexander, founder and leader of the cult of Glykon, the human-headed snake god. He found Alexander surrounded by a mob of worshipful locals. As Alexander extended his hand in greeting, the visitor bowed as if to kiss the proffered hand and then sank his teeth in it in a savage bite.

Thus did Alexander the Quack Prophet meet his future biographer, Lucian of Samosata. Like the Cynic philosopher Diogenes (he who used a lantern in daylight to search for an honest man), Lucian continued to clamp his teeth in rogues, albeit in a figurative rather than a literal sense. Lucian's satire on the life of Alexander of Abonuteichos immortalized Alexander as the archetype of the cosmic scoundrel and charlatan. It proved to be the beginning of a long line of writings exposing fraudulent religious cults and assailing rogues and charlatans generally. James Randi's exposures of tricksters and swindlers in *Flim-Flam!* and *The Faith Healers* are just the most recent skirmishes in a battle whose first shots were fired by Lucian.

As Lucian tells the story, Alexander was born in Abonuteichos of undistinguished parents. As a youth, Alexander supported himself as a male prostitute. One of his lovers, a disciple of Apollonius of Tyana (founder of another well-known cult) became his mentor and taught him all the tricks of the strolling mountebank. Eventually, Alexander took up with a partner, an astrologer nicknamed "Nutsy." Together,

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- encourages critical and scientific thinking
- serves as an information resource on extraordinary claims
- provides extraordinary evidence that skeptics are cool

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A follow-up to last issue's report on the "Amazing" Kreskin.

Muscling in on Kreskin

By Patti Maslinoff

In the last issue of the *Skeptical Eye*, Mike Epstein recounted his experience at a performance by the "Amazing" Kreskin. I was reminded of the very interesting and enjoyable evening that I had when I went to see Kreskin last August. I will confess, though, that my enjoyment was at Kreskin's expense and not at all because I found his show entertaining. On the contrary, I thought he spent too much time telling us why he is so "amazing" and very little time demonstrating it. So why did I have such a good time that evening?

Those who have seen Kreskin's performance know that he leaves his audience with the impression that he has the psychic ability to read minds. If this were true, he never would have called *me* up on stage! But he did.

Kreskin called up several people. He asked four of us to hide something in the room while he went backstage with the remaining volunteers, who were supposed to ensure that he didn't peek. Kreskin claimed that when he returned he would find the hidden object. I was one of the four involved in hiding the object. When Kreskin returned from backstage, he sent the volunteers who had kept him under

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Other Cool Stuff

CSICOP Chairman **Paul Kurtz** will discuss "Science, Skepticism, and the Paranormal" at Johns Hopkins University on Thursday, April 11. The program, which is free and open to the public, will take place at 3:30 p.m. in the Arellano Theater, Levering Hall, on JHU's Homewood campus in Baltimore. It will be followed by a reception with Dr. Kurtz, and NCAS members are invited. The program is part of a colloquium series titled "Science for the 1990s." For more information, call the JHU Student Activities Office, (301) 338-8209.

On April 24, the third scheduled movie in the **Seeing Is Believing Film/Speaker Series** will be *Inherit the Wind* (1960), based on the notorious Scopes trial, in which a biology teacher was tried for teaching the theory of evolution. Commentary by NCAS board member Dr. Steve Shore, an astrophysicist at NASA/Goddard Space Flight Center. Cosponsored by NCAS and the University of Maryland, the series features films shown in a theater setting on the big screen. At 8:00 p.m. in the Art/Sociology Building, room 2203, University of Maryland, College Park.

Physics Is Phun is an ongoing free public lecture series sponsored by the Physics Department at the University of Maryland, College Park. The programs are held in Physics Department lecture halls. Doors open at 7:00 p.m., program 7:30-8:45. For details, call (301) 405-5994. Upcoming lectures include: "Going in Circles with Physics," on Thursday March 21, Friday March 22, and Saturday March 23 (physics of rotation, including tops and other toys); "The Physics IQ Test," Thursday May 9, Friday May 10, and Saturday May 11 (a collection of intriguing physics conundrums, with an opportunity to predict the results).

"**Evolution of Darwinian Thought**," a talk by philosopher Philip Kitcher of the University of California, San Diego. At the University of Maryland, College Park, April 4, 3:30 p.m., in the Art/Sociology Auditorium (2203). Call (301) 405-4258 for details.



By Chip Denman

Skeptics like Henry Gordon and James Randi have found the Sleeping Prophet to be somewhat less inscrutable. In his book *Extra-Sensory Deception*, Gordon credits Cayce's medical knowledge to his vast reading in the areas of osteopathy and homeopathy. Cayce also made wide use of popular home remedies of the time. And many of his successes can easily be explained by the well-known placebo effect.

Both Gordon and Randi (in *Flim-Flam!*) point out that Cayce also had many failures. In fact, ARE even has a book, *The Outer Limits of Edgar Cayce's Power*, in which the failures are "explained." These explanations are often less than convincing, however, as in the case of Theodora Alosio, a little girl who died of leukemia. Cayce's big mistake was that he did a remote reading on her the day after she died. In his remarks he even prescribed a diet for her, completely unaware that she was dead. This is explained away with such excuses as: the stenographer was thinking of another little girl; the letter about her was not written by her mother; and some of her relatives may not have had an open mind. Gordon calls these "psychic copouts."

Meanwhile, ARE, which previously maintained a rather low profile, is enthusiastic about the exposure on "Unsolved Mysteries." Given a boost by the New Age movement, the association tripled its membership in 1989 to 100,000, only to have it decline by last November to 74,000 and dropping, according to the *Virginian-Pilot* on February 2, 1991. It was further reported that Chicago executive Edwin N. Johnson, a finance and marketing expert, would take over as chief operating officer at the end of the month. C.T. Cayce continues as president of the organization, but will concentrate on lecturing and fund raising.

Will starring in an "Unsolved Mysteries" program make Virginia's Sleeping Prophet a phenomenon as popular as those mysterious circles found in wheatfields? Stay tuned....

Editor's note: "Unsolved Mysteries" welcomes opinions from viewers (speaking as individuals, NOT as representatives of NCAS) at the toll-free number 1-800-876-5353. □

This spring NCAS has begun organizing field trips to an alternative reality. Bring your own popcorn; we are going to the movies.

Even in the earliest days of motion pictures, a dualism emerged: the Lumiere brothers used the camera to portray down-to-earth realism, while Melies made the fantastic and impossible come alive. Today's films often use fantastic elements in a matter of fact way, sometimes leaving the audience to wonder how much of the story *might conceivably* have a basis in fact. Can science address the mystery of UFOs? What *are* the tricks of phony psychics? What do we really know about seances, "satanic" cults, or hypnosis?

Once a month we will present a movie that touches on an element which some might accept on faith, while others would arch a skeptical brow. By pairing each film with a speaker who will provide a short (20-30 minute) commentary, we can appreciate the magical ride in the imagination while thinking critically about the science in the physical world behind it.

This series is a joint project between NCAS and the Honors Program at the University of Maryland. All films are being shown at the College Park campus in the Art-Sociology Building room 2203 at 8:00 pm. We hope to attract a campus audience, in addition to our regular members, and the events are free to all. If you have been looking for a way to convince a friend that skeptical thinking can have a fun side, this is your chance!

The playlist for this spring is described on page 12. We are planning to resume the series next fall with
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The Great Realtor in the Sky

According to recent reports in the *Washington Post*, the local real estate market may have bottomed out and be headed for at least slightly better times. Unfortunately, if true, that prediction could mean an economic downswing for religious supply stores, as sales of St. Joseph figurines drop.

Unless you've been a desperate seller yourself, you might not know that if all else fails, you can turn to St. Joseph to help sell your house. The *Post* has reported several times on the use of the statuettes by local real estate agents; more recently, an item in *Washington City Paper's* "News of the Weird" column (Feb. 1) indicates that the practice has spread nationwide. Religious supply stores in Chicago, Newark, Detroit, New York, San Jose, and other cities have reported increased sales of the figurines.

As in any type of ritual, it's important to do it just right, but opinions vary as to the correct procedure. Everyone agrees the statuette should be buried in the yard--this may be difficult if it's a condo you're trying to sell--but some say the figurine should be placed upside down, while others claim the head must point toward the street.

Your religious affiliation--or that of your real estate agent--apparently makes no difference to the success of the ploy. Why should St. Joseph care whether or not you sell your house? Recall that he was a carpenter, so by extension a homebuilder, and in the Catholic Church he's the patron saint of carpenters and other manual workers. And if you don't close a deal even with St. Joseph's help, you can still turn to one other saint--St. Jude, the patron of lost causes. □

True Believers

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The Thinking Person May Favor Gullibility over Skepticism

By Bruce Bower

Anyone who has chuckled at an outrageous headline blazing across a supermarket tabloid can tell you that understanding an idea and believing in that idea do not go hand-in-hand. Otherwise, checkout-stand regulars would accept such proclamations as "Cave-Men Looked Like Elvis!" as articles of faith.

Think again, shoppers. Enquiring minds not only want to know; they also tend to believe, at least initially, what they read and hear, according to psychologist Daniel T. Gilbert of the University of Texas at Austin.

"Much recent research converges on a single point--people are credulous creatures who find it very easy to believe and very difficult to doubt," Gilbert argues in an article scheduled for the March *American Psychologist*.

His contention may spark debate, but it hardly qualifies as unprecedented. More than 2,300 years ago, the Greek philosopher Aristotle said the ability to doubt is rare, emerging only among cultivated, educated persons.

Aristotle's claim has gained support in the past decade from several studies indicating that young children generally accept the statements of adults uncritically--a tendency that often distorts youngsters' eyewitness accounts of crimes.

However, current psychological theories of belief formation lean more heavily on the notions of another philosopher--René Descartes. The influential 17th-century French thinker maintained that the mind effortlessly and automatically takes in new ideas, which remain in limbo until verified or rejected by conscious, rational analysis.

Descartes' detachment of comprehension from critical assessment--although less well-known than his separation of mind from body--continues to influence scientific assumptions about how people think, Gilbert maintains. For instance, computer scientists typically design state-of-the-art systems modeling language acquisition and other mental abilities to ingest information in a "neutral" form before determining that information's usefulness or destination.

But Dutch philosopher Baruch Spinoza, writing shortly after Descartes' death, offered an entirely different perspective on thought. Spinoza argued that to comprehend an idea, a person must simultaneously accept it as true.

Conscious analysis--which, depending on the idea, may occur almost immediately or with considerable effort --allows the mind to reject what it initially accepted as fact.

Spinoza's seemingly preposterous claim finds backing from three experiments reported by Gilbert and his co-workers in the October 1990 *Journal of Personality and Social Psychology*. The experiments test a basic assumption of Spinoza's theory: If people initially believe both true and false ideas, interruption of the mental evaluation of those ideas should interfere with the ability to reject bogus claims, while true notions would maintain their seal of approval.

In the first of those studies, 35 college students learned the meaning of fictitious nouns--which they were told represented Hopi Indian words--by reading definitions on a computer screen, such as "a twyrin is a doctor." Immediately after each definition appeared, the computer displayed the word "true" or "false" to indicate whether the statement was correct. On some trials, a tone sounded just after the computer affirmed or denied a statement. Because students had to press a response button when they heard the tone, it momentarily distracted their attention.

Interruption by the tone caused a substantial increase in the number of computer-denied propositions that the students later accepted as true on an identification test. On the other hand, interrupted students were not more likely to label a computer-affirmed definition as false.

By initially accepting both true and false ideas, the volunteers apparently thought in a Spinozan fashion, Gilbert asserts. Thus, distractions undermined the subsequent thought necessary to scrutinize denied claims, but not affirmed ones.

Descartes' scheme, in contrast, assumes that interruptions play equal-opportunity havoc with the rational evaluation of both affirmed and denied statements.

In the second study, 20 students viewed a series of smiling male faces shown on a video monitor. On some trials, the monitor displayed the word "true" or "false" before showing a face, to signal whether the man expressed genuine or feigned happiness. On other trials, signal words appeared after the students saw a face.

Students who were distracted by pressing a button at the sound of a tone just after viewing each face usually misidentified false smiles as genuine, but not vice versa. Even those informed ahead of time that a smile was false often labeled it as genuine if they were subsequently interrupted. In other words, when distractions derailed their train of thought, volunteers who had been given reason to

doubt false information nevertheless tended to accept that information as true.

In the final study, the researchers presented 30 students with descriptive phrases about an imaginary animal called a glark. Participants then decided whether new propositions about glarks were true or false. During this task, they were occasionally told to read a statement about glarks as quickly as possible without gauging its veracity. Each of these phrases appeared a second time during the test for evaluation as true or false.

Students probably accepted quickly read propositions at first, rather than treating them neutrally, Gilbert argues. They later reported one-quarter of the speed-read false statements as true, whereas they identified nearly all the speed-read true statements correctly.

"We're naive Cartesians," Gilbert contends. "We assume beliefs are under conscious control at all times. But beliefs can be created merely by passively accepting information without attempting to analyze it."

He points to other lines of research that support his argument. For instance, psycholinguists established nearly 20 years ago that people presented with true and false sentences generally take less time to determine the accuracy of the true statements. One research team wrote that when individuals read assertions, they "start with the truth index set to true."

Psycholinguistic work also suggests that the comprehension of a denial (say, "armadillos are not herbivorous") first involves grasping the concept under dispute ("armadillos are herbivorous"). A Spinozan mind employing this mental tactic should at times believe what has clearly been denied, Gilbert points out.

A 1981 study directed by psychologist Daniel M. Wegner of Trinity University in San Antonio, Texas, illustrates this paradox. In a finding of particular interest to journalists, students who read propositions such as "Bob Talbert not linked to Mafia" reported markedly more negative impressions of the fictitious Talbert than did students who read neutral statements such as "Bob Talbert celebrates birthday."

People also automatically tend to seek out evidence that confirms their beliefs about others. Studies have shown, for example, that volunteers led to believe in the outgoing nature of a young woman later asked her questions concentrating on the extent of her sociability, while neglecting to probe for shy or reticent aspects of her personality.

In related work, psychologists studying persuasion and lie detection have observed that people often believe what others tell them without question. Opinions about others, as well as autobiographical claims, often gain acceptance

more readily when the listener performs a competing task that diverts attention from the speaker's message.

"People who sell used cars and vacuum cleaners have long known about the persuasive power of timed interruptions and diversions," Gilbert notes.

Many brainwashing and coercion techniques rely on extreme methods to fragment the attention of political prisoners, he adds. Interrogators often keep prisoners awake for days at a time and then browbeat the exhausted captives with an ideological barrage they find difficult to resist. Forced confessions also exert insidious effects: After writing and reciting a captor's message many times over, weary prisoners start to doubt their own opinions.

The same principles extend beyond used car lots and dictator's dungeons, warns psychologist John A. Bargh of New York University. "My hunch is that control over automatic, unconscious influences on judgment and behavior is not usually exercised," says Bargh, who co-edited a compilation of research on the subject (*Unintended Thought*, 1989, Guilford Press, New York.) "It's not that people are lazy. They tend to think these influences don't exist, and often don't have the luxury of extended thought about what they hear or read from moment to moment."

Moreover, Gilbert argues, just as healthy people immediately believe what they see, doubting their eyes only on rare occasions, so must they initially believe what they read or hear, if only for a fleeting moment.

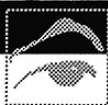
Gilbert and his co-workers have yet to study whether distracted attention increases the likelihood of believing obviously outrageous assertions. Although Spinoza's theory holds that a statement such as "Hitler was a woman" meets instant acceptance and almost as quickly goes up in flames as contradictory evidence leaps to mind, that prediction proves difficult to study in the laboratory.

Despite gaps in scientific knowledge about belief formation, "the burden of proof has shifted onto Descartes' theory," Gilbert contends.

For now, though, a 1984 Gallup poll of a national sample offers a bit of comfort to the much-maligned Spinoza: One in five respondents referred to supermarket tabloids as "accurate."

Who knows? Tabloid believers may regularly suffer from attention meltdown in the checkout line upon hearing their grocery bills.

Editor's Note: Each week Science News publishes about 20 pages of very readable capsule reports on the latest developments in all fields of science. Annual subscriptions are \$34.50, to Science Service, Inc., 1719 N St., NW, Washington, DC 20036. □



A Skeptic's Response

This feature of the *Skeptical Eye* is designed to provide skeptics with brief, logical answers to questions that may arise in conversation. Has someone—a friend, a coworker, or a family member—ever raised a question of this sort that you found yourself hard pressed to answer? If so, send the question to this column.

Cold Fusion

What's the hot news?

By Steve Shore

The power of the stars appeared in earthly kitchens two years ago—at least in Utah. Cold fusion, confusion: Whatever label you apply to the discovery announced in 1989 by two research teams in Utah, the discovery of room-temperature nuclear fusion stands as a model of a pseudoscientific phenomenon.

News that University of Utah researchers Stanley Pons and Martin Fleischmann had achieved an extraordinary release of energy, consistent only with a nuclear reaction, from what to all appearances was a simple battery appeared first in the *Wall Street Journal* and the *Financial Times*. Simultaneously word spread that a second team, headed by Stephen Jones at Brigham Young University, had obtained similar energy releases with a different signature, by similar means.

The world was immediately treated to one of the most massive barrages of publicity, speculation, and spectacle ever known to scientists in this century. The reason for the enormous interest was immediately clear. Self-sustaining nuclear fusion has been the “holy grail” of researchers for several decades, and here a few lone chemists (not even physicists!) had been able to produce it in a kitchen, at room temperature, and at a cost of mere pennies.

When the first press conference was held, on March 23, 1989, the University of Utah team already had a paper in preprint and submitted for publication; the Brigham Young group had published a preliminary theoretical explanation but were still completing their paper. Both were available to physicists around the world within a few days by means of faxes. The papers were carefully scrutinized, probably with more intense interest than any others I have ever encountered.

The University of Utah group claimed to see the release of energy by a simple reaction. Deuterium, concentrated in solution, was electrochemically introduced into palladium rods. There the concentration of the deuterium, and the high number of free electrons in the metal, promoted (they claimed) a chance fusion of the nuclei. Brigham Young's Jones had previously proposed that the collective interactions between electrons in a metal, which make the electrons behave as if they were slightly heavier than normal, could “trick” the deuterium atoms into thinking that they should be closer together in equilibrium—so close

Nuclear fusion: The process of releasing energy by building heavier nuclei from lighter ones. The binding energy of nuclei increases with increasing mass and the excess energy left over after binding is released as radiation. Since nuclei, being like-charged, repel each other, enormous temperatures are required to force the protons to become close enough to bind.

that they slightly overlapped and therefore had a chance of fusion.

The reaction was known never to occur otherwise in nature, but that was no obstacle; it was assumed to be rare, although not impossible, and

therefore could not be dismissed out of hand. In addition, the researchers all had good reputations: Jones was an expert in muon-catalyzed fusion (on which his theoretical idea was modeled) and Fleischmann and Pons were called “respected electrochemists.”

Problems were spotted immediately in the preprints that were circulated. The reaction, in which two deuterium nuclei fuse to form 3He (the light isotope of helium) with the release of energy and neutrons, was an extraordinarily rare event. There should be detectable neutrons, and gamma radiation, from the experiment. While the researchers reported that they had observed an increase in the temperature of the medium corresponding to a large release of energy, they had made critical assumptions about the mechanism of the release and its site in the palladium. No controls had been carried out, with ordinary water replacing deuterated (or heavy) water in the battery, and there were few details of how the runs were conducted and how contaminating background sources were treated. In short, the press conferences and initial papers contained such limited information that replication became difficult.

The weeks that followed the press conference saw several major scientific meetings hastily organized to study the effect, colloquia held at most of the major physics departments in the country, and numerous papers published in *Science* and *Nature* magazines. By the time the Jones paper appeared in the April 27 issue of *Nature*, there had been hundreds of pages devoted to the topic by others. Groups in Texas (Texas A&M), India, and Brazil reported partial replications within two weeks, but details were lacking. Two groups in Poland had tried the experiment, both successfully, it appeared. There were replication claims from Hungary, and a Soviet claim for success at an even lower temperature.

Pons and Fleischmann claimed that they were collaborating with Los Alamos National Laboratory on a replication experiment, a claim denied by the lab. Sandia National Laboratory got into the act, setting up several experiments. One feature was that each claimed a different signature of the effect! The same had been true of the original announcement—one group claiming to detect radiation and heat but no neutrons, the other claiming the neutron

signature without the gamma radiation.

Results were reported at the American Chemical Society meeting that spring to the sound of cheers (the chemists were heroes who had shown up the physicists at their own game) and at the American Physical Society meeting (where the Utah group refused to present their results). Several groups in the United States, at Yale, Caltech, and Los Alamos, announced the first results from their experiments and prepared them for publication—all negative and highly critical of the laboratory technique.

Most telling was the fact that Pons and Fleischmann persisted in not allowing groups to have access to samples of their palladium rods. One of the critical signatures of the proposed reaction would be to find some of the helium, along with tritium, embedded within the rods. These atoms do not diffuse out of the crystal if they are deeply implanted, as required by the cold fusion mechanism, and therefore they should be detectable within the sample. Some residual tritium was claimed in a few of the replication attempts, but later analyses showed this result to be due to contamination.

The University of Utah had staked its reputation on the outcome of the experiments by proposing to set up a Cold Fusion Research Institute on campus, for which it requested \$5 million in state funding. A hearing was held in the U.S. Congress to determine if there should be a massive, all-out federal project to fund cold fusion research. A later report by the Office of Technology Assessment found the claims baseless and recommended against funding—none was forthcoming. But the Utah legislature did provide the funds, an “institute” was set up on campus, and the university’s lawyers busily set about patenting the rights to the process.

All of this was accomplished by mid-July 1989, an astoundingly short period of time. By then, there was a book in the works, and yet more conferences were being organized. At this critical juncture appeared a paper, the result of a collaboration by scientists at Yale and Brookhaven National Laboratory, showing that both the gamma ray and neutron emission from the Pons-Fleischmann-type setup was completely consistent with terrestrial backgrounds. One would have thought that such a finding would be fatal to the prospects for cold fusion. In fact, there was a sharp drop-off in interest in cold fusion among the scientific community after this; a similar report by a group at Caltech appeared shortly thereafter.

Polywater vs. Cold Fusion: Pseudoscience in Fast-Forward

Event	Polywater	Cold Fusion
First announcement	1962	March 23, 1989
First publication	1962	April 1989
First newspaper report	May 1968	March 23, 1989
First major conference	1967	April 12, 1989
First reported replications	1968	April 1989
First theoretical explanations	1969	1986
First significant negative results	1970	June 1989
First book	1982	January 1990
End of controversy	1983 (?)	?

Jones and the Brigham Young group, having proposed their mechanism and stated their results, retired from the battlefield bloodied but honorably. But the University of Utah went on the offensive. It promoted a newsletter on cold fusion from its “institute” to the business community, and Pons

became the center of a local storm. At last word, in January of this year, Stanley Pons announced through his lawyers that he would leave his position as a professor at the university to devote himself full time to research on cold fusion.

The state allowed that it would continue funding the institute, but warned that “further reluctance to provide details of his research could cost him future funding.”

So cold fusion has joined N-rays, polywater, room-temperature superconductors, spoon-bending superminds, the “fifth force,” perpetual motion machines, and many more on the discard piles of the history of science. What has been gained? Well, on the positive side such a flap shows how science works—at least in a way. The claims were checked, and found wanting.

Does this application of the scientific method educate the public? Not likely. Many people think that scientists are an arcane and overly self-important bunch who know a lot less than they think they do. So the public mind just adds this to the (growing) list of things that scientists have gotten wrong.

Moreover, the cold fusion episode shows the press to have been sensation-mongers who didn’t care whether the claimed results were reasonable or even creditable, only whether they would help sell news broadcasts and newspapers. Even now, the occasional story appears in which a reporter still takes the whole incident seriously as science, rather than viewing it as the pathological breach of the discipline that it was. We have a long way still to go.□

Cold Fusion Reading List

Gai, M., et al. 1989. “Upper Limits on Neutron and Gamma-ray Emission from Cold Fusion.” *Nature* 340 (6 July), p. 29.

Lindley, D. 1989. “Cold Fusion: More than Skepticism.” *Nature* 339 (4 May), p. 4.

Franks, F. 1982. *Polywater*. Cambridge, MA: MIT Press.

they traveled about swindling the local "fatheads." Their biggest score was a wealthy woman who had come to Bithynia from Macedon many years before. When she decided to return to Macedon they tagged along. In Macedon, Alexander and his colleague first encountered the local breed of snakes, which were enormous but also docile and harmless. Alexander and Nutsy cooked up a scheme for using one of these snakes to establish an oracle to rival Delphi. After some debate, the would-be prophets decided on Abonuteichos as the site of their oracle: the town and surrounding province of Pontus would provide an ample supply of superstitious rubes, better provided with money than brains.

To launch their enterprise, they planted bronze tablets in the sanctuary of Apollo at Chalcedon. The inscriptions on the tablets stated that Asclepius and his father Apollo were moving forthwith to Abonuteichos. When the citizens of Abonuteichos heard of this miraculous event, they immediately voted to erect a temple and began to dig the foundations. Alexander was by now back in Abonuteichos, sporting the ensemble of a high-class prophet: flowing hair, purple shirt, and scimitar in the style of the legendary Perseus. Alexander had manufactured a Sibylline oracle identifying Abonuteichos as the birthplace of a prophet, which included a cryptogram identifying Alexander as the prophesied one.



The final step was the epiphany of Alexander's god. One night he buried a blown-out goose egg in the excavation for the new temple's foundations. He had placed a baby snake in the eggshell and carefully sealed it up with white wax and white lead. The next day Alexander, clad only in a gold brocade G-string, appeared in the main square of town. Babbling ecstatically and incoherently (except for the frequent words "Apollo" and "Asclepius"), he drew an awed crowd. He led them to the site of the temple, where after singing some hymns he scooped up the previously buried egg and cracked it open to reveal the baby snake, which he claimed to be Asclepius. Alexander then hurried home, where he lay low for several days to let the suspense build and allow the word of the miraculous birth to spread throughout the province.

Finally, Alexander let the frenzied mob in to view a further miracle: the baby snake had grown to enormous size virtually overnight and now had the head of a man! The snake was of course one of the tame Macedonian variety; he had wrapped it around his body so that the head was tucked under his arm, out of sight. A linen mask provided the god's human face. Eventually the human-headed snake (now named Glykon) would grace pictures, models, and statuettes--even the coinage of Abonuteichos.

Having equipped himself with a god, Alexander went into

the oracle business in a big way. He directed those seeking predictions to write their queries on scrolls which they were then to seal with wax or clay. He would take the scrolls in to the god; they would later be returned to the clients, seals intact, but with the answer to their questions miraculously written underneath. Alexander had mastered several tricks of the trade: with a hot needle, he would cut through the wax underneath the impressed seal, read the contents of the scroll, add an appropriate oracular pronouncement below the question, and then restore the seal by a second passage of the hot needle; alternatively, he would make a cast of the impression on the seal, using a quick-setting plaster, break the seal, carry out the necessary hocus-pocus, and then make a new wax or clay seal with the cast of the original. Later, for an appropriately enhanced fee, Alexander had Glykon deliver prophesies in person: the windpipes of some birds were fitted together and inserted into the back of the linen mask; a confederate outside the room provided the voice of the god.

As his oracle grew in fame and stature, Alexander created a three-day mystery ceremony (like that conducted at Eleusis). After an expulsion ritual in which Epicureans and Christians were enjoined to be gone, the ceremony presented in turn the births of

Apollo, his son Asclepius, and the new god Glykon. It ended with the love affair of Alexander and the goddess Selene. Throughout, Alexander made sure his flowing robes frequently parted to show his golden thigh (a piece of gilded leather tied over his upper leg). This golden thigh led to learned speculation by some university professors as to whether Alexander had the soul of Pythagoras or merely one similar to it. (One cannot but be forcefully reminded here of the disgraceful role played by various "professors" in validating the spurious claims of Uri Geller and the like.)

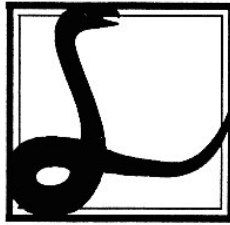
Needless to say, occasionally the oracle's predictions did not work out. On one occasion, the governor of Cappadocia, one Marcus Sedatius Severianus, sought a prophesy before he marched his forces into Armenia to battle the Parthians. Upon receipt of a favorable prediction, Severianus set out to do battle with the Parthians. When Severianus and his forces were unfortunately (and unexpectedly) annihilated by the Parthian king, Alexander quickly substituted an unfavorable prediction for the previous favorable one. (Many modern psychics, such as Jeane Dixon and Kreskin, have developed the manufacture of the "retrodictio" to a high art.)

Even when Alexander could not fudge the record in this way, the true believers who sought auguries from Glykon found it easy to explain away misfired predictions. When Publius Mummius Sisenna Rutilianus, a prominent Roman

official, sought Glykon's advice as to an appropriate teacher for his son, the oracle directed, "Choose thou Pythagoras. Choose the great poet and teacher of battle." Within days of this pronouncement the boy died. Rutilianus immediately saw the true import of the god's advice: his son was to be taught by Pythagoras and Homer, both of whom were dead!

From Abonuteichos the influence of Alexander's cult spread into the surrounding provinces. Eventually it spread to Italy and Rome (partly through the sponsorship of Rutilianus, whom Alexander dominated to such an extent that in response to an oracle he married Alexander's daughter). Members of the imperial court sought advice from Glykon, their questions providing Alexander with much information about political undercurrents at Rome as well as unsurpassed opportunities for blackmail.

Even Emperor Marcus Aurelius was not immune to Alexander's blandishments. During the Marcomannic War, Alexander sent the emperor an oracle directing him to throw two live lions into the Danube. "Whereupon there shall come in an instant / Victory, glory abounding, and with it the peace we so cherish." The sacrifice was duly performed and the Roman forces immediately suffered a catastrophic defeat. In the face of this apparently failed prediction, Alexander blandly pointed out that the god had prophesied victory without specifying whether it was to be Rome's or the enemy's. Alexander also tried to get the emperor to change the name of Abonuteichos to Ionopolis and permit the city to issue a coin with Glykon's image on it. (His campaign was ultimately successful. Abonuteichos became Ionopolis, a vestige of this name being preserved down to the present by the Turkish village of Ineboli that occupies its site. Examples of the coinage showing Glykon may be seen in many museums.)



Lucian had tried to influence Rutilianus against his marriage to Alexander's daughter. In vain, because Rutilianus, although otherwise a reasonable man and responsible public official, was virtually insane on the subject of religion. To expose the bogus oracle, Lucian sent hoax inquiries to the shrine, such as: "Query: Is Alexander bald? [Apparently he wore a wig to disguise the fact.] Answer: Sabardalchu malach Attis was different."

Not content to wage his war against shams at long range, Lucian took the war into the enemy's country. With an escort supplied by the governor of Cappadocia, Lucian journeyed to Abonuteichos, where he greeted Alexander as described above. The enraged believers were about to mob him when Alexander intervened, telling the crowd that Glykon could turn even bitter enemies into friends. After a brief colloquy, in which Alexander reproached Lucian for his advice to Rutilianus against the marriage, Lucian found

it discreet to pretend a newfound friendship for Alexander. Alexander for his part arranged for a boat to carry Lucian on the next stage of his journey and deliver him to Amastris.

On the journey to Amastris Lucian discovered that the crew had been ordered by Alexander to throw him over the side. The captain prevailed on the men not to harm their passenger and he was set safely ashore. In revenge, Lucian tried to get up a lawsuit against Alexander, but Avitus, the governor of Bithynia and Pontus, got him to drop the case on the grounds that Rutilianus's influence would prevent him from punishing Alexander even if he were caught *in flagrante delicto*.

Alexander's life ended with another failed prophesy: he had predicted that he would live to be a hundred and fifty and die by being struck by lightning. He did not live half so long, dying (according to Lucian) before the age of seventy of a gangrenous leg.

As good skeptics we should be willing to ask how much, if any, of Lucian's entertaining tale of Alexander of Abonuteichos is true. For a long time, classical scholars regarded Lucian's *Alexander* as an example of the insignificance of the targets of Lucian's personal satires. The most recent scholarship has confirmed at least the broad outline of his story. The cult of Glykon was in fact widespread and influential. The name of Abonuteichos was indeed changed to Ionopolis. The city did in fact issue coinage bearing the likeness of Glykon. On the other hand, Lucian may have copied the descriptions of the mechanics of Alexander's oracular frauds from books attacking other oracles. It is, however, fair to point out that many fake oracles may have used the same tricks, and Lucian may have adopted the tactic of exposing the fraudulent nature of Alexander's oracle through submission of bogus questions because it was likely to be effective.

The influence of Lucian on later writers was profound. His works were imitated, plagiarized, extended, updated, and otherwise mined for usable ideas by notable writers including Erasmus (whose *Colloquies* contain a Lucian-inspired debunking dialogue), Thomas More (*Utopia* owes much to Lucian's *True History*), Jonathan Swift (*Gulliver's Travels* is another spinoff), Ben Jonson, Christopher Marlowe, and Goethe. Even today, after nearly two millennia, Lucian and his skeptical descendants are still sinking their teeth into humorless crackpots.

*Editor's note: Lucian's life of Alexander is available in English translation in **Selected Satires of Lucian**, edited and translated by Lionel Casson, WW Norton, NY 1968.*

□

observation back to their seats, leaving on stage the four of us who knew where the object was.

Kreskin took the first volunteer by the hand and appeared to lead him out into the audience. He told the volunteer to concentrate on the location of the hidden object, thus implying that he would locate the object through the use of mind reading. To Kreskin's misfortune and my amusement, I knew how this appearance of psychic ability is actually accomplished. Kreskin is not "mind reading," he is "muscle reading." The volunteer communicates to Kreskin through unconscious hand movement. While concentrating on a particular location, the person will often unknowingly move muscles in the hand that is being held, giving clues to Kreskin as to the direction in which he should proceed.

I had always been curious to know how little movement in the hand was required before a "muscle reader" can sense the movement. This was a great opportunity for me to find out. However, I hesitated to try, for two reasons. First, I generally object when audience volunteers try to "out-smart" a magician by not cooperating. Magicians who treat their audience with respect and honesty, making it clear that they do not possess any paranormal abilities but are using their skill to entertain the audience, deserve the cooperation of any volunteers. But Kreskin leaves his audience wondering if he does have an ability to read minds. He is not honest with his audience, and therefore I decided that I was not obligated to be honest or cooperative with him.

My second concern was that, because I would be focusing my attention on Kreskin's response to my hand movement rather than on the location of the hidden object, Kreskin would be able to attribute any failure on his part to my lack of concentration. I decided, however, that I was not involved in an experiment to prove or disprove Kreskin's alleged psychic ability. I personally have been convinced by the literature about Kreskin that he does not possess such ability (see, for example, D. Marks and R. Kammann, *The Psychology of the Psychic*, Buffalo, NY: Prometheus Books, 1980). Rather, I simply wanted to learn, for myself, how light a touch was needed in the hands of an accomplished muscle reader.

So, while I watched Kreskin proceed with his first volunteer, I decided that I was going to take advantage of this opportunity to be a skeptic at close range. Kreskin's first choice "led" him to a table near the front of the audience far from the location of the object. After searching high and low without success, Kreskin asked his first volunteer to sit down. He returned to the stage and chose me. As we walked down into the audience, I repeated to myself, "Make your hand limp. Relax your hand." Kreskin and I wandered aimlessly for about 30 seconds. Then I decided to start experimenting. I thought, "I want him to turn left here." I tried not to move my

hand at this point, intending to do so later, but I did tense my muscles very slightly. I was amazed, though, to see that he immediately turned left. Apparently, he was able to detect the faintest muscle tension. Then, I tensed my muscles while thinking about turning right. He turned right. We wove in and out, through the audience, wherever I chose to lead him. I was having a great time. Kreskin, however, didn't seem to be enjoying himself. Reluctantly, I realized that I couldn't keep this up forever, so I decided to lead him to the same table that the person before me had led him to. He again searched awhile in that vicinity. Finally, he gave up and sent me back to my seat.

He returned to the stage for the third volunteer, but again he was not successful. Before trying his fourth and final volunteer, he told the audience how upset he was that he had been unsuccessful so far. He said that if he couldn't find the object with the last volunteer, he would consider both retiring this part of the act forever and not accepting his fee for the evening. I couldn't tell whether this display of anxious emotion was part of the act; I don't know if it is unusual for him to try as many as three people and still have no clue as to where the object has been hidden. However, when he did go out into the audience with the fourth volunteer, Kreskin went directly to the object. It took only seconds. I guess that this person was easy to "read." I confess that I was disappointed: I wanted to see how Kreskin would handle the situation if he failed to find the object.

This was the high point of the show. The rest of the evening was mostly full of low points. I left the show feeling angry that Kreskin had misled the audience regarding his abilities. His conduct during one routine really outraged me. Kreskin had distributed pieces of paper to the audience, instructing them to write something on them that he couldn't possibly know, such as a home address. When he collected these scraps of paper, he apparently put them in an envelope which he sealed. I have been told that in fact he pockets some of them, and I did see his right hand go into his pocket as he returned to the stage. (I was sitting on the far right; fewer than 10 people were in a position to see his hand slip into his pocket.)

Then, amazingly, he asked the entire audience to close their eyes, giving him the opportunity to peek at the scraps of paper, the contents of which he was supposedly going to "divine." I have since learned that he accomplishes this by concealing the pieces of paper behind an odd-looking clipboard that he holds on his lap. It seems that Kreskin didn't even possess sufficient skill as a magician to accomplish this trick with the audience watching. I was astonished to see that the audience did, in fact, close their eyes when he directed them to do so. I, of course, being possessed of a skeptical nature, kept my eyes open. And, indeed, I generally find this to be a wise policy in life: I try always to keep my eyes open. □

NCAS Past-Life Reporting

No More Good Flaps?

Unidentified flying objects have been around--or at least reports of them have--since 1947. UFO expert Philip J. Klass has been studying the elusive phenomena almost from the start, since he was a fledgling editor at Aviation Week magazine back in the early 1950s. In his NCAS program last December 9, "UFOs Brought Down to Earth," Klass tossed away his prepared talk and opened the floor to questions from the audience. The ensuing discussion ranged over the whole history of UFOs.

In the early days, there was the Washington, D.C., UFO flap of July 1952, which formed the subject of the young editor's first UFO report (conclusion: radar blips caused by a temperature inversion): Klass recalls that President Truman took an interest in this report of UFOs flying over the city, yet he knew nothing about the UFO that had supposedly crashed in New Mexico in 1947: "This gives one to think."

More recently, Klass has investigated the so-called MJ-12 papers, purported to be top-secret documents from the Truman administration concerning UFO investigations. The papers were made public in 1987 by William L. Moore (coauthor of *The Roswell Incident*). In fact, the documents are a hoax, Klass has shown, perpetrated "either by someone unknown, attempting to incriminate Moore, or else by Moore himself." His investigation of the MJ-12 papers focused on internal evidence, including style, typeface, and handwriting. It was made much easier by Klass's long experience with UFO claims: he was able to compare the MJ-12 papers to genuine government documents of the period simply by pulling samples out of his own extensive files.

Klass finds today's media reports of government coverups of UFO evidence a disappointment compared to earlier reports of UFO flybys and landings. "There almost aren't any good UFO reports anymore," he said.

--Lys Ann Shore

Skeptical Audience Undergoes Mass Hypnosis!

Hypnotherapist Seán O'Neill has found that some people, under hypnosis, will sometimes "spontaneously regress" to a "past life." That finding has not made him a believer in so-called past-life regression; on the contrary, it serves as a reminder that "most people are contaminated on this subject." In his January 27 NCAS program, "Hypnosis and Past Lives," O'Neill expanded on the points made in his "Skeptic's Response" column in the last issue of the *Skeptical Eye*.

He reminded the audience that popular belief in past-life regression has existed in this country for many years. It got its start here four decades ago, with the notorious case of Bridey Murphy, a supposed previous-life persona of one Virginia Tighe. Now California has taken the fad a step further, with practitioners who undertake to provide clients with previews of lives to come. O'Neill noted that "future-life progression" would have some interesting scientific and philosophical implications, since it would imply both linearity of time and immutability of events.

O'Neill concluded his talk with a demonstration: he led the entire audience through a hypnotic exercise, involving progressive relaxation of muscles and mind, and guided imagery for centering attention "where the candle flame burns upright." This was followed by a gradual return to ordinary consciousness, at each person's individual pace, and hopefully to a feeling of being "more relaxed and energized than before."

--L.A.S.

"I've heard it said that Nostradamus is like a barometer--a fancy instrument to tell you what the weather is."

--Folksinger Tom Paxton, 1991

Time to Renew? Time to Join?

Check the date printed on the mailing label on this issue. If you are looking into a past-life, then it must be time to renew your membership in NCAS.

Yes, I want to _____ join NCAS. _____ renew my membership.

Single: _____ @ \$20 Double (2 persons at same mailing address) _____ @ \$30 Full-time Student* _____ @ \$10

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President's Column, from page 3

new films and speakers. Some films under consideration are: *Harry and the Hendersons*, *Earth vs. the Flying Saucers*, *Fantastic Voyage*, *Marjoe*, and *The Manchurian Candidate*. If you have other suggestions, or if you would like to lead a post-movie discussion about a particular topic, write or call me at the NCAS address.

Thursday, February 21, *Nightmare Alley*

The rise and fall of a sideshow psychic. Features accurate portrayal of the techniques used by mentalists and so-called psychics--as well as the ethical dilemmas they must deal with. *Commentary by professional magician Jamy Ian Swiss.*

Thursday, March 21, *Family Plot*

A seedy medium and her ne'er-do-well boyfriend encounter a sinister couple while searching for a missing heir. They all become involved in diamond theft and attempted murder. *Commentary on spiritualism, seances and mediums by Chip Denman.*

Wednesday, April 24, *Inherit The Wind*

Based on the notorious Scopes monkey trial. A biology teacher is put on trial for teaching the theory of evolution. *Commentary by Steven Shore.* □



The Last Word

A Skeptical Eye on the CSICOP Conference

By Lys Ann Shore

In the last issue of the *Skeptical Eye* and in this issue (p. 2), two NCAS members have provided up-close accounts of the (not-so-) amazing magic of Kreskin. Now it appears that Kreskin himself will be participating in a panel discussion on "Controversies in Hypnosis" at the 1991 CSICOP Conference in Berkeley, California, May 3-5. It will surely prove a lively session!

Looking over the conference program, I'm encouraged to see that many of the scheduled topics are subjects that NCAS is also addressing: Hypnosis, for example, was the subject of January's public program by NCAS board member Seán O'Neill as well as of his "Skeptic's Response" in the last issue of the *Eye*.

Some NCAS members will be attending the CSICOP conference, but many more won't. Of course, the meeting will receive extensive coverage in the *Skeptical Inquirer*, but we plan to provide a brief special report in the summer issue of the *Eye*. If you will be attending the CSICOP conference and would like to cover one or more sessions, please call or write NCAS to say so. Our reports on Kreskin are proof, to my mind, that the National Capital Area Skeptics have a distinctive view of the issues and a cool, skeptical voice to address them. □

Keep Your Eye Open

Send your writings or original art for future publication in the *Skeptical Eye*. Contributions should be short (500-1000 words maximum, or two to four double-spaced pages) and typed, not handwritten. If you use a computer, please send hard copy along with your floppy disk (5.25" or 3.5", WordPerfect or ASCII). Please be sure to include your name, address, and telephone number. Send all contributions to *Skeptical Eye*, 8006 Valley Street, Silver Spring, MD 20910. The copy deadline for the next issue is May 1. □

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