

# Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

Volume 28, No. 3 • May / June 2004

## Darkness, Tunnels, AND Light

**Explaining  
the Near-Death  
Experience**

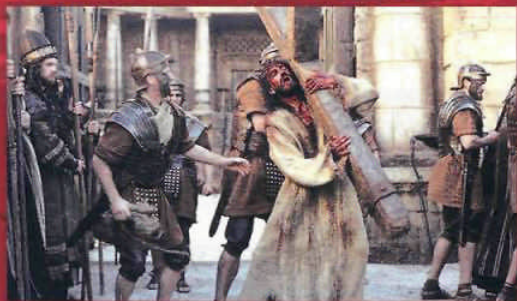
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**Confessions  
of a Former  
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**Anti-Science  
in College Courses**

**Pathological  
Parapsychology**

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# Skeptical Inquirer

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KARLA McLAREN

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## EDITOR'S NOTE

### *Explaining Puzzling Experiences, Observations*

Skeptics are sometimes labeled "debunkers." (Critics usually apply that term—wrongly—derogatorily. Debunking of unsupported claims has a cherished place in science and in scientific skepticism.) A more appropriate term, one I like, is "explainers." Following good, critical investigation, science-oriented skeptics often can *explain* things. Without denying the validity of one's powerful, puzzling personal experience, scientific investigation can provide a plausible natural explanation. That's when this business gets rewarding. We have two such articles in this issue.

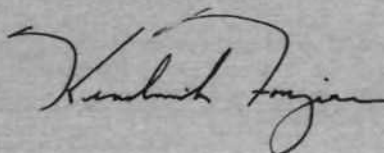
In "Darkness, Tunnels, and Light," G.M. Woerlee, an anesthesiologist practicing in Holland, seeks to explain the "wondrous" phenomena often reported since antiquity by the dying or those recovering from near-death experiences. As an anesthesiologist he has to view both bodily and mental phenomena from a physiological perspective. He started his inquiries out of curiosity, and he ends up showing the ways the functioning of the body can generate seemingly profound experiences of darkness, tunnels, and light.

B.D. Gildenberg explains an entirely different subject. He describes once-classified Skyhook balloon-launch programs during the early decades of the Cold War (beginning in 1947). You'll see how these extraordinary balloons and the events surrounding their payload recoveries likely provided stimuli for a host of themes that have become part of UFO lore. These balloons were huge—double the size of the Hindenberg. Their operations were secret because they were part of missions to spy on the Russians or at least take large packages of instruments aloft to gain useful information about Soviet threats. Gildenberg's revelations are those of a participant. He worked thirty-five years with Skyhook balloon operations. Reading his article, and learning about once-classified projects like Project Gopher and Project Grab Bag, one can almost (*almost*) sympathize with UFO believers when they attributed semi-accurate reports of strange sightings and surrounding military hush-ups to alien spacecraft.

In another vein altogether, we offer a heartfelt confessional from a former New Age author and leader, Karla McLaren. She describes the anti-science cast of the New Age movement and her painful struggle to escape its grip and embrace skepticism, whose style wasn't particularly open or welcoming. She ends up thanking prominent skeptics for their contributions, but I think she offers some valuable lessons we can all take to heart.

In "Nurturing Suspicion," Phil Mole draws upon his personal experiences taking graduate-level "science and society" classes. He describes the distorted, negative view of science that students get in such courses. Postmodernism prevails, and science becomes a caricature.

Finally, Douglas M. Stokes, a knowledgeable internal critic of research methodology in parapsychology, trains his keen critical eye on Brenda Dunne, whose "relaxed methodology" doing remote viewing experiments at Robert Jahn's laboratory at Princeton seems central to their reported (and disputed) successes.



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## Reports: Policy, Not Science, Drives Bush Administration

BENJAMIN RADFORD

A report by a group of more than sixty influential scientists, including twenty Nobel laureates, asserts that the Bush administration has systematically distorted scientific facts and findings to support its policy goals. The report, "Scientific Integrity in Policymaking," was written by Seth Shulman and issued on behalf of the Union of Concerned Scientists. The 38-page report (available at [www.ucusa.org](http://www.ucusa.org)) states: "A growing number of scientists, policy makers, and technical specialists both inside and outside the government allege that the current Bush administration has suppressed or distorted the scientific analyses of federal agencies to bring these results in line with administration policy."

The findings cover many policy areas, including environmental protection, abstinence/sex education, and pre-war claims that aluminum tubes found in Iraq were to be used for enriching uranium—and thus creating nuclear weapons. In response to an EPA report on the effects of climate change, the report charges that "the Bush administration has sought to exaggerate uncertainty by relying on disreputable and fringe-science reports and preventing informed discussion on the issue."

While acknowledging that previous presidents also engaged in distorting and manipulating science, the report concluded that the Bush administration's efforts to do so were "unprecedented." The White House largely dismissed the report as a politically driven collection of unrelated incidents that do not constitute a pervasive anti-science bias.

Still, many of the report's findings have been independently verified. One high-profile example, Iraq's aluminum tubes, was the subject of a *60 Minutes II* segment titled "The Man Who Knew" (February 4, 2004). It featured

Houston Wood, a senior scientist at Oak Ridge Laboratories and an authority on uranium enrichment by centrifuge. Wood and virtually all other scientists concluded that there was no link between the tubes and a nuclear program, yet their findings were at odds with Bush administration claims.

While a CIA report advocated the administration's view that the tubes were to be used for developing nuclear weapons, a set of technical experts from the Department of Energy's Oak Ridge, Livermore, and Los Alamos national laboratories reviewed the CIA analysis and disagreed with its findings. Independent investigations by the State Department's intelligence branch and the International Atomic Energy Agency also concluded that the tubes were unsuitable for uranium enrichment.



This information was presented to Secretary of State Colin Powell and others prior to their remarks on the topic. Yet Powell embraced the discredited CIA report and downplayed the collective scientific position, testifying that "Most U.S. experts think [the tubes] are intended to serve as rotors in centrifuges used to enrich uranium."

Wood stated that politics overrode science in how the information was presented to Congress and the American people. "Science was not pushing this forward. Scientists had made their evaluation, made their determination, and now didn't know what was happening." *60 Minutes II* correspondent Scott Pelley asked Wood about Powell's claim: "Do you know even one [expert] who says yes, these are for nuclear weapons?" Wood replied, "I don't know a single one, anywhere." In this case the true scientific consensus was apparently exactly the opposite of what was stated by the administration in making its case for war.

—Benjamin Radford

*Benjamin Radford is managing editor of SKEPTICAL INQUIRER and author of Media Mythmakers: How Journalists, Activists, and Advertisers Mislead Us (Prometheus 2003).*

### Is Georgia Out of Her Mind?

It is probably all over but the shouting now, but once again leaders of my beloved Georgia have succeeded in making my state the object of worldwide ridicule. Elected State School Superintendent Kathy Cox first made international headlines when she tried to remove the word *evolution* from the state school curriculum in January (see sidebar on following page). The brouhaha over that forced Cox to change her mind, helped greatly by complaints from former President Jimmy Carter, from the *Atlanta Constitution*, and from many CSICOP supporters and allies (including from me, from the National Center for Science Education, and from professors at the University of Georgia and Georgia State University such as Barry Palevitz and Sarah Pallas). Even Governor Sonny Perdue, a fellow Republican and archconservative, condemned removing the word, though he made it clear that he

## President Carter Defends Evolution in Biology Classes

In early 2004, the Georgia state superintendent of schools Kathy Cox ordered the term *evolution* removed from the proposed biology curriculum. It was, she said, "a buzz word that causes a lot of negative reaction." In its place, Cox suggested "biological changes over time."

After heavy criticism from educators and scientists, Cox apologized and replaced the word. Among those outraged was former President Jimmy Carter, who weighed in with the following statement:

As a Christian, a trained engineer and scientist, and a professor at Emory University, I am embarrassed by Superintendent Kathy Cox's attempt to censor and distort the education of Georgia's students. Her recommendation that the word "*evolution*" be prohibited in textbooks will adversely affect the teaching of science and leave our high school graduates with a serious handicap as they enter college or private life where freedom of speech will be permitted.

Nationwide ridicule of Georgia's public school system will be inevitable if this proposal is adopted, and additional and undeserved discredit will be brought on our excellent universities as our state's reputation is damaged.

All high school science teachers, being college graduates, have studied evolution as a universal element of university curricula, and would be under pressure to suppress their own educated beliefs in the classroom.

The existing and long-standing use of the word "evolution" in our state's textbooks has not adversely affected Georgians' belief in the omnipotence of God as creator of the universe. There can be no incompatibility between Christian faith and proven facts concerning geology, biology, and astronomy.

There is no need to teach that stars can fall out of the sky and land on a flat earth in order to defend our religious faith.

Fortunately, it is the responsibility of the State Board of Education to make the final decision on the superintendent's ill-advised proposal.

thought "intelligent" design/creationism deserved equal time. It turned out that backing down on the word was trivial compared with the rest of her proposal. As Professor Pallas noted (quoted in Colin Campbell's column in the *Constitution* on February 10), other ideas that would have been censored included "the ecological impact of humans, age of the Earth, common ancestry, plate tectonics, Big Bang theory, and the history of life, the Earth and the universe."

After a further firestorm of criticism, Superintendent Cox appears to have backed down on the broader destruction of the science curricula in Georgia. By mid-February, the Georgia Board of Education announced that it "expects the new Georgia curriculum to be world-class, beginning with full inclusion of the recognized national standards in each curriculum area." Cox appears, as of this writing in late February, ready to go

along with this radical idea. As columnist Campbell wrote on February 11, a major question still remains: "Why the changes in the first place?" The superintendent is, after all, a graduate of a highly regarded school (Emory University in Atlanta) and thus is unlikely to be as ignorant as her proposed changes would suggest. Campbell's conclusion seems likely to be right: that creationists tried "to hijack our biology classes." The hijacking appears to have been thwarted.

All may be well that ends well, as this embarrassing story appears to have ended. But there's an important lesson to be learned: protecting science and science education cannot be taken for granted. We must remain vigilant—and not just in Georgia.

—Ed Buckner

*Ed Buckner is Southern Director for the Council for Secular Humanism and a native Georgian.*

## Jury Verdict a Pain in the Neck for Chiropractors

Chiropractors across North America went into damage-control mode after an Ontario (Canada) coroner's inquest jury found that neck manipulation was the cause of the death of a forty-five-year-old Toronto woman.

The five-person jury announced their verdict on January 16, 2004, bringing to a close the nearly two-year-long inquest, one of the longest in Ontario history. It found that factory worker Lana Dale Lewis's death was an "accident"—that is, caused by the high chiropractic neck manipulation she received about two weeks before her death.

The jury had only three choices for the cause of death: undetermined, accident, or natural causes. Lawyers for Canada's major chiropractic organizations had argued for two years that Lewis's stroke and death were the result of natural causes including her high blood pressure, smoking, obesity, migraine headaches, and alcohol consumption. Calling her a "walking time bomb," they told the jurors that neck manipulation had nothing to do with her stroke and death.

The jury, after examining 250 exhibits and listening to the often-conflicting testimony of twenty experts, found that her death came as a direct result of the upper neck adjustment administered by Toronto chiropractor Victor Emanuele. Six days after the manipulation, Lewis was admitted to hospital suffering from a stroke.

She died from another stroke on September 12. Amani Oakley, the young lawyer for Lewis's large, working-class family, called the decision a "complete and utter victory." Not surprisingly, Tim Danson, the high-profile lawyer for the Canadian Chiropractic Association and the Canadian Memorial Chiropractic College, said the verdict was "perverse" and characterized the inquest a "massive miscarriage of justice." Danson claimed two world experts did not get to testify at the inquest and he threatened to appeal the decision. The lawyer for the coroner's

office called Danson's charges "utter and complete nonsense."

It's not surprising that the chiropractors would come out swinging after the decision. Though the inquest process is supposed to be a nonadversarial search for the truth, the chiropractors had three high-priced legal teams at the inquest (one for the individual chiropractor, one representing the Ontario College of Chiropractic the provincial regulatory body, and one for the association and the teaching college). It is estimated their collective legal fees were well over two million dollars. Danson said negative media coverage associated with the inquest had caused a 25 percent drop in business, costing chiropractors in Canada more than \$100 million.

The verdict is likely going to cost them even more. Among the jury's seventeen recommendations are items that may give potential chiropractic patients pause. Jurors advised that chiropractors obtain written informed consent from every patient before performing a neck adjustment and that every patient be given an information sheet with risks and stroke symptoms clearly spelled out. They called for a database to collect all adverse events following neck manipulation and for large-scale studies into high-neck adjustments and stroke.

The verdict is especially important because the inquest almost never happened. After Lewis's death in 1996, the coroner's office invited three top chiropractic officials to a meeting in an effort to avoid a time-consuming and costly inquiry. According to the coroners present that day, the chiropractors agreed to inform their membership of the dangers of upper-neck manipulation and to take steps to inform their patients. They never did.

In 1999, the Lewis family called for an inquest. Their request was denied in 2000. But when chiropractors began taking out ads in local newspapers trumpeting the lack of an inquest as proof that Lewis's death was unconnected to neck manipulation, the family appealed and an

inquest was finally called. The family also launched a \$12 million lawsuit against the chiropractor who treated Lana Lewis.

The inquest was a tortured affair, marred by constant legal wranglings and delays. At one point, more than ninety slides of Lewis's artery went missing only to be returned months later by the lawyer of one of the chiropractors; the original representative for the family, Dr. Murray Katz—a well-known chiropractic critic—was dismissed after the chiropractors produced private letters and e-mails they said were received in a plain brown envelope; and Danson, the chiropractors' lead lawyer, even made a motion to have the family's lawyer dismissed only months before the inquest's conclusion.

In the end, these tactics did not sway the two-man, three-woman jury. Their landmark ruling was only the second of its kind in Canada. In 1998, a Saskatchewan inquest directly linked a chiropractic neck adjustment to the death of a twenty-one-year-old Saskatoon woman. Laurie Jean Mathiason suffered a massive stroke on her chiropractor's table on February 4, 1998, immediately following a neck adjustment. She died three days later. An inquest found there had been a traumatic rupture of her left vertebral artery.

All the jury recommendations, designed to prevent similar future deaths, concerned chiropractic neck manipulation. Their instructions that all chiropractors provide literature about the risks of chiropractic treatment in the waiting rooms and that the profession work with the government to conduct studies to determine the incidence of stroke associated with neck manipulation were never carried out.

Canada's 5,000 chiropractors estimate that they perform approximately 10 million to 14 million neck manipulations a year.

—Paul Benedetti

*Paul Benedetti teaches journalism in the Faculty of Information and Media Studies at the University of Western Ontario. He is*

*the co-author of Spin Doctors: The Chiropractic Industry Under Examination (Dundurn Press, 2002).*

## Saddam: Not Even Remotely Viewed

Remote viewing is defined by *The Skeptic's Dictionary* as "... the alleged psychic ability to perceive places, persons, and actions that are not within the range of the senses..." In short, it would include the ability to "see" people and things from a distance. The December 13, 2003, capture of Saddam Hussein in the now-famous "spider hole" about nine miles south of Tikrit, Iraq, begs the question: Where were all the psychics and remote viewers? Couldn't they have provided the location of this torturer and killer of hundreds of thousands?

To my knowledge, there was no formal prediction on record—before the capture—by any alleged psychic or remote viewer regarding the whereabouts of this ruthless killer. Of course such an accurate prediction would have saved the United States government scores of dollars and probably many lives.

It's interesting that remote viewing predictions are readily made when they tend to be vague or unimportant—such as "seeing" mountain ranges on Jupiter—a gaseous planet. Perhaps this is why the CIA abandoned remote viewing in 1995: They tried it, and it didn't work.

If psychics have failed to pass the James Randi Educational Foundation's One Million Dollar Paranormal Challenge, they're not likely going to be able to collect the \$25 million reward for information leading to Saddam's capture. But all is not lost for remote viewers: Maybe they can provide the precise location of Osama bin Laden.

—Bryan Farha

*Bryan Farha is a professor at Oklahoma City University and a member of CSICOP's astrology subcommittee.*

## Community College Biologists Oppose Alternative Medicine

In November 2003 the Empire State Association of Two-Year College Biologists (ESATYCB) voted to confirm a position statement opposing any association between community college biology instruction with the unscientific beliefs of chiropractic and other alternative medicine schemes. The ESATYCB is the first statewide educational organization to openly oppose the encroachment of alternative medicine into undergraduate academic biology education.

Alternative medicine uses the language of science, but convolutes scientific reasoning to justify its undemonstrated claims. Sales pitches that sound similar to research findings abound on the Internet and in print. Televised infomercials, uncritical news reports, and sensationalized "investigative" programs are blurring the line between that which is considered accepted science and that which is not. Inevitably, this

widely disseminated and attractively packaged pseudoscience finds its way into biology classroom discussions.

Recently, associations between alternative medicine and well-regarded educational, governmental, and medical institutions have been created. These relationships emerge as de facto endorsements of alternative medicine's theories by respected groups. This perceived validation of "junk biology" undermines the task of biology educators whose responsibility is the presentation of science-based information.

The ESATYCB has no authority over New York State's community college biology departments. The expectancy is that the policy statement will "red flag" alternative medicine as a questionable source of science-based information and provide support for educators who openly question dubious medical claims.

—Frank Reiser

*Frank Reiser is president of the Empire State Association of Two-Year College Biologists.*

### Position of the Empire State Association of Two-Year College Biologists On Alternative Medicine

The Empire State Association of Two-Year College Biologists strongly disapproves of the association of academic biology departments at two-year colleges with unscientific and anti-scientific philosophies and practices. These are common among Chiropractic, Naturopathy, Homeopathy and many other practices known as "complementary and alternative medicine." Such affiliations are likely to undercut scientific and critical thinking in the curriculum and hinder colleges trying to maintain high standards in science education. Additionally, such associations serve to legitimize unscientific and anti-scientific philosophies and practices and weaken the public's understanding of science at a time when a full appreciation of the scientific method is sorely needed.

Adopted by majority vote November 10, 2003.

## Noted Researcher, Melvin Harris, Dies

For the friends and admirers of British researcher Melvin Harris, the bells that rang in New Year's Day 2004 instead should have tolled mournfully. Harris died unexpectedly that afternoon at the age of almost 74, survived by his devoted wife Maureen.

A writer, broadcaster, and television researcher, Harris became a highly respected authority on nearly every topic on which he set his sights. Whether it was the Amityville Horror hoax, the alleged prognostications of Nostradamus and Jeane Dixon, or the supposedly ghostly manifestations of spiritualist charlatans, Harris was sure to illuminate and dispel mystery. His 1986 *Investigating the Unexplained* remains a definitive work (reissued by Prometheus Books, 2003).

He was also a leading expert on the grisly Whitechapel murders of 1888. In his *Jack the Ripper—The Bloody Truth* (1987) and *The Ripper File* (1989), he shot down myriad "solutions" to the killer's identity that were based on fantasies or fiction. His own solution, which he proposed in his *The True Face of Jack the Ripper* (1994), was, correct or not, a cut above most.

Harris worked as a researcher for the BBC as well as for the popular Yorkshire Television-produced series, *Arthur C. Clarke's Mysterious World* and *Arthur C. Clarke's World of Strange Powers*. The Clarke series producer, Simon Welfare, described him as "a great unsung hero" who typically kept a low profile but—when ready with "all the facts wonderfully checked"—then "came out with guns blazing."

Welfare termed Melvin Harris "the best researcher I've known." And Isaac Asimov once wrote to him: "You do marvelous work, I admire you greatly." No doubt many others echo those sentiments and mourn the loss of Melvin Harris and his contributions to rational inquiry.

—Joe Nickell

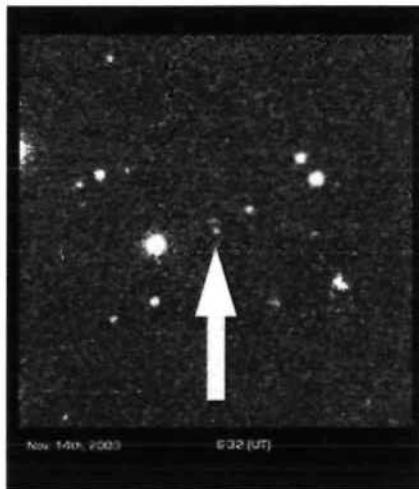
*Joe Nickell is Senior Research Fellow for CSICOP.*



## Cold, Icy Sedna Newest and Farthest Member of Solar System

A small, cold object three times farther from the Sun than Pluto is the newest object in our solar system—and the farthest yet discovered. Named Sedna, for the Inuit goddess who created sea creatures of the Arctic, it is 1,000 miles in diameter, about three quarters the size of Pluto. The planetoid—it's too small to be called a planet—has a highly elongated orbit and is now 8 billion miles away from the Sun. It takes 10,500 years to make one orbit. Its temperature is about minus 440 degrees F.

"The Sun appears so small from that distance that you could completely block it out with head of pin," said the leader of the research team, Michael Brown of the California Institute of Technology. NASA, which funded the research, announced the discovery March 15.



Discovery photo of the distant new planetoid Sedna. NASA announced its discovery March 15.

Sedna was discovered November 14 with a 48-inch telescope on Mount Palomar. Sedna is apparently the largest solar system object discovered since Pluto in 1930 (tiny Pluto's status as a "planet" has in recent years been under strong challenge). Sedna is probably the first detection of the long-hypothesized "Oort cloud," a distant repository of icy bodies that periodically make their way into the inner solar system as comets.

Sedna appears to be the second most reddish object in the solar system, after Mars.

—Kendrick Frazier

Kendrick Frazier is Editor of the *SKEPTICAL INQUIRER*

## San Francisco Legislator Pushes Feng Shui Building Codes

A California lawmaker has proposed that the Golden State "adopt building standards that promote feng shui principles" in order to increase the "positive energy" available to the state's millions of residents. The non-binding resolution was put forth in January of 2004 by Leland Yee, Assistant Speaker pro Tempore of the California State Assembly, and urged the state architect and cities across the state to adopt design standards consistent with the Chinese principles of feng shui.

As a press release put out by Yee's office explains, "The structure of a building can affect a person's mood, which can influence a person's behavior, which, in turn, can determine the success of a person's personal and professional relationships, and the aim of Feng Shui architecture is to study how the environment in which people live may affect their lives, and influence their quality of life."

Feng shui, which translates as *wind and water*, is a collection of ancient Chinese traditions intended to improve a person's life through the carefully planned layout of buildings and the objects within them. Feng shui integrates several concepts of Asian mysticism, most essentially the flow of chi, or energy. Supposedly, chi can be manipulated, redirected, and even blocked by one's environment. According to feng shui tradition, positive chi is influenced by such things as natural lighting and materials, electronic equipment, and good airflow. Artificial lighting and materials, an "unlucky" or "unbalanced" building shape, clutter, and even keepsakes that stir up bad memories can all produce negative chi.

Feng shui contains plenty of common-sense techniques such as eliminating clutter to reduce stress and painting rooms in certain colors to encourage a good mood. But it is also rife with archaic superstitions, such as avoiding unlucky numbers, keeping toilet lids down to prevent chi from going down the drain, and placing mirrors at strategic points to deflect negative energy.

Though the principles originated in China four to five thousand years ago, a simplified version of feng shui has become a worldwide fad in recent years, especially among businessmen looking to increase their success. Corporations are also buying into the feng shui craze: Merrill Lynch, Citibank, and Donald Trump have all utilized feng shui principles for their properties. But this may have less to do with a desire for good chi than with business savvy: some CEOs may view this as a strategy to win over Asian clients, for whom bad feng shui can be a deal-breaker.

Despite California's reputation as somewhat New Age-y, the harshest criticism has come from within the Golden State. "Frivolous bills such as these may cause a few chuckles, and even a mention by Jay Leno, but in reality they're no laughing matter," fumes a *Modesto Bee* opinion writer (February 18, 2004). "Every bill introduced in the Legislature, no matter how mundane or silly, consumes staff time for research." Spokespeople for the California Building Standards Commission (CBSC) and the California Building Industry Association have also criticized the resolution, citing the shortage of affordable housing and the substantial numbers of rules and regulations that already govern the construction of new buildings. "My gut feeling of it is that in these times with the budget, cuts to resources, cutbacks, we're looking at the highest priority issues," said Stan Nishimura, executive director of the CBSC. "I don't think this is our highest priority."

—John Gaedderi

John Gaedderi is the Assistant Director of Communications for CSICOP. □

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# 'Visions' Behind The Passion

JOE NICKELL

The controversy over Mel Gibson's *The Passion of the Christ* has largely ignored an essential fact. While some Christians have praised its "biblical authenticity" and others have criticized its "brutal violence and portrayal of ancient Jews" (Tokasz 2004), a major source for much of the movie has received comparatively little attention.

## Playbook

Reportedly, Mel Gibson "accidentally stumbled upon" a book—*The Dolorous Passion of Our Lord Jesus Christ*, first published in 1833—which "planted a seed in his mind and finally played a large role in motivating him to make the film" (Book 2004). In fact, Gibson (2004) termed the book "great background and foundation material."

Unfortunately, the book consists of the "visions" of a German nun, Anne Catherine Emmerich (1774–1824). As a child she had an invisible "guardian angel"; experienced apparitional encounters with Jesus, Mary, and various saints; and displayed a special sensitivity to anything held sacred ("Life" 1904). In short, she exhibited many of the traits indicative of a "fantasy-prone" personality (Wilson and Barber 1983). That is not only the personality type of numerous religious visionaries, but also of countless spiritualist mediums, alien abductees, and other fantasizers. They typically believe they have special powers, often

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including the ability to communicate with higher entities—a sort of adult version of a child's imaginary playmate.

A mystic, Emmerich may also have been a pious fraud. She made a show of being Christlike, even sleeping on planks placed on the ground in the shape of a cross, and from the age of about twenty-four claiming to receive the pain of Jesus' crown of thorns. Soon, blood was flowing down her face. After she was accepted into an Augustinian convent, she supposedly received "a mark like a cross upon her bosom" and still later exhibited a full array of stigmata (i.e., the wounds of Christ's crucifixion).

She was subjected to a three-week medical examination in 1819, but "this examination appears to have produced no particular effects in any way" ("Life" 1833). Neither science nor the Catholic Church has ever authenticated a single instance of stigmata. Indeed, many stigmatics have been proven fraudulent (Nickell 2000; Nickell 2004).

Still later Emmerich claimed to practice inedia. That is the alleged ability to forgo nourishment by suspending all eating and, sometimes, drinking (Nickell 1993, 225–229). Emmerich supposedly subsisted only on wine, and eventually "only pure water" ("Life" 1833). She was never properly investigated, but some inedics who *were* were exposed as frauds.

## Visions

Anne Catherine Emmerich's purported visions—which provide far more elaborate and intimate details of Jesus's final hours than do the gospels—are also suspect. According to Catholic writer Ian Wilson (1988, 76):

In these we follow the elaborate preparations and ceremonial for the Last Supper. We are accorded flowing descriptions of the judgment hall of Caiaphas and the palace of Pilate. Not a blow seems to be omitted from Jesus's savage scourging by six drunken and blood-thirsty sadists. We are told of housewife Veronica wiping Jesus's face with her veil. We learn how special holes had to be dug for the three crosses. And we grieve with the holy women as they wash Jesus's lifeless body and lavish it with unguents in preparation for his burial.

Wilson continues:

But it is precisely this welter of detail that gives rise to most disquiet. Just how satisfied can we be that her account of the Last Supper is authentic? Should we really believe her assertion that the Last Supper chalice once belonged to Abraham? Does her description of Caiaphas's mansion accord with modern excavations of the city's first century priestly dwellings? Is it not a little suspicious that the Veronica story as she describes it owes nothing to any original gospel and everything to medieval legend? Does her assertion that Adam was buried at Golgotha owe more to symbol-seeking tradition than accurate reportage? How sure can we be that Jesus's body was washed and anointed before burial? The gospels do not specifically say so, and according to some, when a Jew died a bloody death the religious requirement was that he should not be washed in order that his life's blood should be buried with him.

Interestingly, Emmerich (1904, 137–138) envisioned Jesus' mother, Mary, and others wiping up the "sacred blood" from Jesus' flagellation, presumably to preserve it. In this imagined anecdote—repeated in Mel Gibson's *The*

*Passion of the Christ*—the linen towels were provided by the wife of the Roman prefect, Pilate. Gibson even goes further: whereas Emmerich only claimed to see Pilate's wife "send" the cloths, Gibson has her deliver them in person.

Ian Wilson concludes:

One could go into detail on the way Catharine [sic] was anachronistic or just plain wrong on point after point. . . . But perhaps more telling is the absence in her visions of any convincing "period" feel, and the inclusion of many stories, like that of Veronica, difficult to accept as anything other than apocrypha.

Emmerich's handling of Veronica's tale is instructive. Representing one of the Stations of the Cross in Catholic ritual, the medieval story derives from earlier legends (dating back to the fourth century) concerning certain miraculous self-portraits of Jesus. Over the centuries, one type of these came to be known as "Veronica's Veil." According to a pious legend, Veronica was a Jerusalem woman who took pity on Jesus as he struggled with his cross on the way to Golgotha. In some versions of the tale, she gave her kerchief or veil to Jesus so he could wipe the blood and sweat from his face, and—in return for her generosity—he miraculously imprinted the cloth with his holy visage.

There were numerous such portrait veils, known, not surprisingly, as "Veronicas." However, the term is believed to be a corruption of *vera iconica*, that is, "true image," the corruption probably inspiring the Veronica tale. (Although the "Veronicas" were supposedly miraculously bestowed, they were actually painted. To explain how there could be many of the "original," another story was invented which told how the holy image could supernaturally duplicate itself [Nickell 1993, 19–22].)

Anne Catherine Emmerich, who was steeped in Catholic traditions, knew that Veronica was a made-up name, deriving from "*vera icon*" [sic], but she claimed it was used to "commemorate" the woman's brave act. Emmerich somehow divined that Veronica's real name was Seraphia, and she added other unlikely details.

### Anti-semitism? Gratuitous Violence?

Much of what critics have objected to in *The Passion*—namely the portrayals of Pilate and the Jewish high priest, Caiaphas, as well as what many have viewed as anti-Semitism and gratuitous violence—appears to derive largely from Emmerich.



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The movie's depiction of Pilate as vacillating and as eventually succumbing to Caiaphas's desire that Jesus be crucified (Tokasz 2004), seems to come straight out of Emmerich. She refers to "The undecided, weak conduct of Pilate" who was "That most weak and undecided of all judges." In contrast, Caiaphas, she says, "even went so far as to endeavor to exclude from the Council all those members who were in the slightest degree favorable to Jesus." According to her, Caiaphas made no effort to conceal his hatred of Jesus (Emmerich 1904, 108, 132, 147).

Although at times Emmerich simply speaks of Jesus' "malicious and cruel enemies" (122), at other times, whether intentionally or not, she appears to malign an entire people. She refers to "the wicked Jews," "the hard hearted Jews," "the cruel Jews" (101, 106, 115), and other disparagements—reflected in Gibson's *The Passion* in the sinister countenances and actions of Caiaphas's followers.

Regarding the film's extreme violence, while acknowledging that *The Passion* offers a "meticulous evocation of its time and setting," *Entertainment Weekly* added (Jensen 2004):

It's also, apparently, the Most Violent Story Ever Told. The scourging of Christ—for some, *The Passion's* most gruesome sequence—sounds like a textbook lesson in torture, with Gibson's camera doting on the instruments used and the flesh-rendering damage they can inflict.

And the textbook that obviously provided the lesson is, again, Emmerich's *The Dolorous Passion*.

According to Emmerich's visions (134):

. . . [T]hey then dragged his arms to such a height that his feet, which were tightly bound to the base of the pillar, scarcely touched the ground. Thus was the Holy of Holies violently stretched, without a particle of clothing, on a pillar used for the punishment of the greatest criminals; and then did two furious ruffians who were thirsting for his blood begin in the most barbarous manner to scourge his sacred body from head to foot. The whips of scourges which they first made use of appeared to me to be made of a species of flexible white wood, but perhaps they were composed of the sinews of the ox, or of strips of leather.

She further envisioned:

Our loving Lord, the Son of God, true God and true Man, writhed as a worm under the blows of these barbarians; his mild but deep groans might be heard from afar; they resounded through the air, as a kind of touching accompaniment to the hissing of the instruments of torture. These groans resembled rather a cry

of prayer and supplication, than moans of anguish. . . .

The Jewish mob was gathered together at some distance from the pillar at which the dreadful punishment was taking place. . . . I saw groups of infamous, bold-looking young men, who were for the most part busying themselves near the watch-house in preparing fresh scourges, while others went to seek branches of thorns.

And so on, in this extreme detailing of violence.

The scope of Emmerich's *The Dolorous Passion* is essentially that chosen by Gibson for *The Passion*. Although an article in *Christianity Today* magazine noted that Gibson did not follow Emmerich slavishly, it did concede the debt, acknowledging, "Many of the details needed to fill out the Gospel accounts he drew from her book" (Neff 2004).

### A "Catholic" Film?

And that is the point many seem to have missed. Conservative Catholic commentator Cal Thomas (2004) stated that the Veronica incident was the only "doctrinally Catholic" element he could see in *The Passion*, thus ignoring the heavy reliance on a Catholic "visionary" for much of the film's content.

The emphasis on Mary is another strongly Catholic element. The film does stop short of making Mary a major object of veneration (creating what some refer to as "Marianity" [Craveri 1967, 32] or, especially when expressed before statues and other images, as "Mariolatry" [Ashton 1991]). Yet Gibson, who has been struck by the positive evangelical response to *The Passion*, admits that is all the more amazing since "the film is so Marian" (quoted in Neff 2004, 35).

The focus should not be surprising since Mel Gibson is a devout Catholic. Moreover, the film's Jesus, Jim Caviezel,

insisted each day's filming begin with the celebration of Mass (Neff 2004, 30).

The result is a film that offers neither an historical nor a fundamentalist view. Of course, historically, apart from later Christian sources, there is virtually no evidence for Jesus' crucifixion—or even his very existence. There are merely a few texts that many critics hold to be "too uncertain or too late to provide any support for the Gospel story, with the only substantial piece of it [allegedly by the Jewish historian Josephus] easily discreditable as a total Christian forgery" (Doherty 2001, 47; see also Price 2003).



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As to the accounts of the Passion in the gospels, they are not only very brief, but scholarly analysis demonstrates that they are also untrustworthy. For example, as Jesus seminar scholar Robert Price (2003, 321) observes, "The crucifixion account of Mark, the basis for all the others, is simply a tacit rewrite of Psalm 22, with a few other texts thrown in." Jesus' exclamation—"My God, my God, why hast thou forsaken me?"—comes verbatim from Psalm 22; also from that Psalm are the piercing of the hands and the feet, the casting of lots for the garments, and other story motifs.

Small wonder that a filmmaker would look elsewhere for details to fill in an otherwise sketchy outline. But Mel Gibson's heavy reliance on a dubious "visionary" is unfortunate, producing not a praiseworthy

cinematic account of a story essential to Christianity but merely another technically impressive yet pseudohistorical Hollywood shockumentary.

### Acknowledgments

I appreciate the input of colleagues, especially Benjamin Radford and Kevin Christopher.

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# Belgium Skeptics Commit Mass Suicide

LUC BONNEUX

Last year, the major health insurance companies in Belgium decided to cover part of the costs of homeopathy. "Covering" is a bit strong: only 20 percent of the costs are reimbursed. The Belgian companies nevertheless offer a quality label to quackery and an encouragement premium to convince the uninformed public that homeopathy has medicinal properties. The poor patient remains in the dark about the real properties of homeopathy, a magic as powerful as the miracle at Cana, where Jesus Christ changed water into wine. In homeopathy, alcohol and water are beaten into powerful drugs.

When SKEPP, the (Flemish) Belgian skeptical organization, attacked the health insurance companies for wasting people's money to promote quackery, we got the traditional response: "People like it." Insurance payers love to be deceived, so let's deceive them. SKEPP suggested reimbursing red Bordeaux wine, as people love red wine, too. We were not joking: there is a trillion times more evidence that red wine (taken in moderation) is good for your health. "Traditional doctors do not perform evi-

*Luc Bonneux has been associate professor in public health at the Utrecht Medical Centrum (the Netherlands). A medical doctor and scientist, financially supported by the people, he says he has a duty to protect the public from quacks and frauds. However, he joined the Belgian skeptics (SKEPP) for esthetic reasons. "In our short journey through Deep Time, understanding makes the trip more beautiful and more enjoyable."*

dence-based medicine." The CEOs of the insurance companies did not explain to SKEPP how quackery would improve the quality of medical practice. It cannot be the idea to add, to the dangerous quacks abusing modern medicine, the somewhat less dangerous quacks selling water and silliness, or is it? And of course, the final argument was that "Homeopathy is cheap!" It may cost Belgium \$18 million per year, or some \$1.80 for every Belgian, for something that does not work. Is \$1,000 cheap for a car that cannot, and never will, operate? The Belgian health insurance companies deliver astonishing insights in economy.

The Belgian skeptics were exhausted and overwhelmed by such well-crafted arguments. Seeing the errors of the skeptic's ways, they resigned themselves to committing mass suicide by drinking a lethal dose of terribly toxic and dangerous drugs: snake poison, Belladonna or deadly nightshade, arsenic, dog's milk, petrol, and cockroach. Dog's milk does not sound *that* dangerous, but try milking a pit bull. To assure immediate death, these powerful drugs were immensely dynamized: the daring skeptics selected the over-the-counter 30C homeopathic solutions (reimbursed by the health insurance, if prescribed by a certified quack). A dynamization of 30C means the poison is diluted  $10^{60}$  times. That is a one followed by sixty zeros. The whole earth (estimated at  $10^{50}$  molecules) is way too small to hold a single molecule in that dilution. That is, in homeopathic terms, an awfully powerful dilution. The immensely "dynamized" spirits of arsenic and snake poison (not to mention the pit

bull milk) will rise from the liquid, and kill the skeptic on the spot. All important newspapers and TV stations were recruited to witness the terrible extermination of these dangerous minds.

It would be a great loss to Belgian academia, a terrible blow to all these narrow-minded people that do not understand the miracles of homeopathy. Among the twenty-three suicides were a hoard of professors from medical and other faculties, a rightly famous publicist and television program maker, and even a few normal people armed with nothing but common sense.

The guy who spawned the idea of the skeptical suicide was Joeri Mesens, indeed an ordinary young man. Once a true believer he became an apostate of homeopathic salvation after conducting self-designed, skeptical experiments on his poor children. Several times he withheld life-saving homeopathic wonder drugs from one of his two sick children, observing that both of them recovered in exactly the same amount of time. The idea of suicide came to him after an argument with his mother, a true believer in homeopathy. She was horrified when he proposed to drink all of her drugs at once.

The idea was taken over by Tom Schoepen, editor-in-chief of the SKEPP's magazine *Wonder en is Gheen Wonder (Miracles Ain't Miracles)*. The son of a once famous Belgian country and western singer, his looks are better than Johnny Depp's. He effortlessly raises highly undiluted hormone levels in fellow human beings blessed with a second X chromosome, and bewitches our

(female) minister of Public Health. Alas, they fall for his looks, but they resist his arguments. They know someone who has been cured by homeopathy, and even more, they know several people who know someone who has been cured by homeopathy, which is obviously an unbeatable argument to subsidize quackery (some jokes about the average Belgian intelligence seem true). As a matter of course, Schoepen and Mesens were joined by the Fidel Castro of the Belgian anti-quackery rebels, the Scourge of Homeopathy, professor in Medical General Practice Wim Betz.

Betz treated the press and the public to a talk on homeopathy and on the products selected for the skeptical suicide. Betz did not need a Castro diatribe of eight hours; a solid twenty minutes was enough to butcher homeopathy: the homeopaths were so kind to deliver their own satirical texts. To be sure the suicidals knew all the risks, Betz cited copiously from Kent's *Materia Medica*, which covers sixteen pages on arsenic, twenty-four on Belladonna, and twelve on snake poison. We learned among other things that arsenic "patients" suffer more at the seacoast, are restless, drink with small sips, and have a ten-

dency to develop wrinkles. If you feel that your organs are escaping through your vagina, or if you bark like a dog, you are more of a Belladonna patient. However, if you lose gas from your vagina and dream of snakes, dog milk is your poison.

Finally the time had come. The skeptics on death row solemnly queued to personally select their own toxin: "In Flander's fields the skeppies glow, to take their poison, row on row." In front of the assembled national press they filled their chalices and drained their drinks, fully expecting to meet their Maker (if He existed). The skeptics didn't succeed in their suicide attempt, however. All of them survived. Those who had come by car had to wait before returning home, a bit dizzy from the alcohol on their empty stomachs. Indeed, homeopathy in alcohol at the liberal dose of a bottle a day might decrease your cardiovascular risk (but a good Bordeaux is still a lot cheaper and infinitely better).

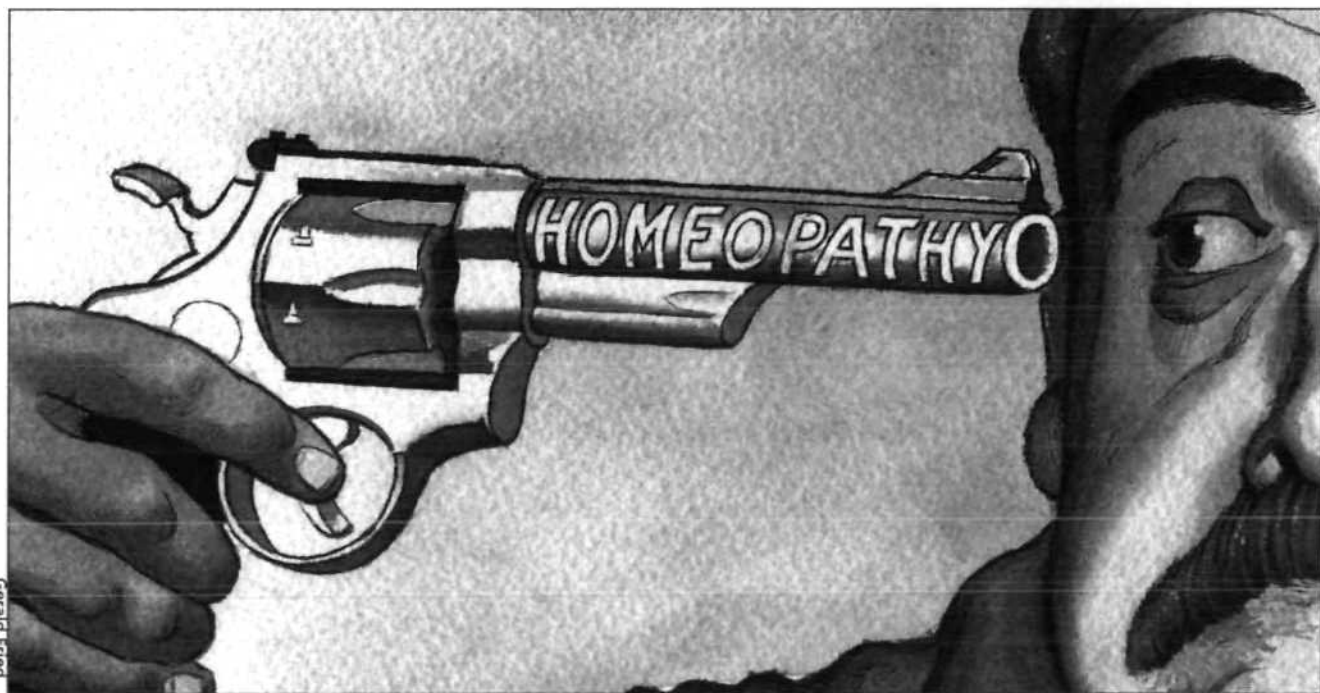
The attempt was amazingly well covered by all the national press media. CANVAS, the equivalent of BBC 2, re-broadcast James Randi's homeopathy documentary, where a carefully con-

trolled experiment showed that Randi's \$1 million was safe: there was not a shred of evidence that homeopathy differed from the pure solvent. It shows that a few drips of acidic humor in a good idea are more efficient than long serious articles. Not so many people know that homeopathy attributes its presumed effects to ridiculously large dilutions (delusions?).

Most of us, including Prof. Betz, who once followed a serious course of homeopathy, have "believed." Being progressive and social, we were critical about the modern drug industry and embraced "ecological" and "natural" alternatives. But there is nothing social or progressive about deluding people. Permitting yourself to be deceived by a silly theory that was outdated and untenable even in the nineteenth century does not show an open or tolerant mind. It only shows you are gullible and an easy prey to smooth talking quacks. We hope some more people discovered this, thanks to our (unsuccessful) suicide attempt.

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# I Am Freud's Brain

MARYANNE GARRY AND ELIZABETH F. LOFTUS

Long ago, Freud theorized that we could banish our upsetting experiences out of conscious awareness, burying them away in an emotional Superfund site. Of course, like all toxic waste dumps, the buried material would still leach its poison into our everyday lives. The job of the therapist, then, is to take charge of the cleanup effort; help us unearth our dangerous memories and begin to deal with them. Freud was never quite clear whether this mechanism should be called *repression* or *suppression*, and he was also never quite clear whether the process happened automatically or effortfully. But no matter what we call it—let's call it *repression* for now—Freud never really explained how repression might happen. Recently, University of Oregon psychology professor Michael Anderson and his colleagues announced that they've figured it out. What they've done, according to various media reports, is show how the brain represses information.

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What did Anderson and colleagues do? To answer this question, consider Anderson's earlier study that set the stage for his recent one. The earlier study was published in 2001, by Anderson and Collin Green, in the prestigious journal *Nature* (Anderson and Green 2001). They asked people to take part in a three-stage experiment. In the first stage, subjects learned forty word pairs (such as *ordeal*, *roach*), so that when given the first word as a cue (such as *ordeal*), they could report the second "target" other word (*roach*). In the second stage, subjects sat at a computer screen while a cue from each pair (*ordeal*) appeared on the screen. When each cue appeared, subjects were given either a *remember* instruction—to think about the target word (*roach*)—or a *suppression* instruction, to *not* think about the target word. In the third stage, everyone took a memory test. During the test, subjects were given all the first word cues, and their task was to recall each target. For example, when given the word *ordeal*

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their task was to recall *roach*.

The central question was whether subjects would be less likely to remember word pairs that they were asked to suppress compared with a baseline measure: memory for word pairs that were not presented at phase two. Anderson and Green found that being asked to remember the word improved memory for it, and that sometimes being asked to suppress the word impaired memory for it. They concluded that their results "support a suppression mechanism that pushes unwanted memories out of awareness, as posited by Freud" (Anderson and Green 2001, 368).

The new research by Anderson repeats the basic experiment, but with a twist. This time, subjects were scanned with an fMRI during the second stage, to measure brain activity while they tried to either think about or to suppress the target words. At the test, memory for each target word was tested twice, once with the original cue word (*ordeal*) and once with a new word that was related to the target word (*insect*). As with their earlier work, this time Anderson et al. found that, relative to baseline (a condition where no presentations of the pair occurred during the second stage), the "remember" instruction produced more remembering. The suppression instruction sometimes produced more forgetting. This overall pattern was true regardless of whether memory was tested with the original cue



(*ordeal*) or with the new related word (*insect*). In addition, subjects showed a different pattern of brain activity when they were instructed to think about words versus suppress them, and more activity in the frontal cortex when they were successful at the suppression task.

What do these findings mean for the notion of repression? Anderson and colleagues have one answer. In the opening sentence of their recent paper, published in the journal *Science*, they claim that their behavioral findings demonstrate a psychological mechanism for "the voluntary form of repression (suppression) proposed by Freud" (Anderson et al. 2004, 232). By the closing paragraphs, Anderson et al. claim that they have demonstrated a neurobiological mechanism for repressing traumatic experiences. To the media, the authors seem unabashedly enthusiastic about the Freudian implications of their results. In a press release (EurekaAlert! 2004) coauthor John Gabrieli, of Stanford, said, "It gets you past the possibility that there's nothing in the brain that would suppress a memory—that it was all a misunderstood fiction." Lead author Michael Anderson went a step further. "This suggests a neurological basis for how people can actually shove something out of mind," he told the *New York Times* (Anahad 2004). "There's no question that we're tapping into something that's relevant to the experiences of people who survive trauma and find the memories become less and less intrusive over time." For other interpretations, you might turn to the media. But they, too, seem to have embraced this research. The brain "can be trained to forget" trumpeted the BBCnews Web site (BBC 2004). Anderson et al.'s work, gushed CNN medical correspondent Sanjay Gupta, might even help us understand how soldier Jessica Lynch could have repressed memories of her traumatic experiences (CNN 2004).

Many in the psychological community, however, have drawn decidedly different conclusions. Why? Let us first consider the results of Anderson et al.'s

memory test. The suppression instruction caused memory to be about 10 percent less accurate—if we average across both the original and new cue tests. The worst memories were when subjects were asked to suppress the target sixteen times and then tested with a new cue, but even then, they still remembered about 80 percent of the target words, compared to about 87 percent baseline performance. That's a far cry from massive repression. In fact, it is a far enough cry from repression that a team of prominent scientists at Washington University, St. Louis has been unable to replicate the basic finding. That is, while Anderson and colleagues have now twice found that the suppression instruction causes poorer memory performance, John Bulevich, Henry Roediger, and David Balota have twice failed to find any such effect (Bulevich, Roediger, and Balota 2003). That is not to say there is no suppression effect, but it does mean that it might be rather fragile. Fragile suppression, of course, sounds like it has little resemblance to robust repression.

Still, let us assume that the suppression effect exists. If so, Harvard professor Daniel Schacter (Schacter 2001) and University of California–Berkeley professor John Kihlstrom (Kihlstrom 2002) have both given us a second reason why some scientists have not embraced Anderson et al.'s new claims. In writing about Anderson's 2001 study, Schacter pointed out a problem that applies to the new Anderson paper as well: both papers tell us about memories for mundane words. How well then, Schacter wondered, do those findings help us to understand repression? After all, one of the hallmarks of Freudian notions of repression is that we push distressing, threatening, personal information out of awareness, not mundane irrelevancies.

Now let us consider the neuroimaging results, which showed that subjects had different brain activities when they tried to remember words than when they tried to suppress them. There are at least three reasons why these results are

unsurprising. First, consider what people do if they are trying *not* to remember something. As neuropsychologist Larry Squire told the *New York Times*, "It's possible [that when subjects are trying to suppress, they] are simply directing their attention elsewhere and using a lot of energy and brain resources to think of something different. I don't think it is necessarily an indication of active repression" (O'Connor 2004). Perhaps, then, we should not be surprised that asking people to do different things causes activity in different brain regions. Second, Anderson et al. found that when subjects were asked to remember words, they showed more activity in their hippocampus. But after all, they did remember more words in that condition, and the hippocampus is linked to remembering. Third, Anderson et al. need to compare brain activity for genuinely suppressed words—words that subjects could not recall on either memory test—and unsuccessfully suppressed words (that is, words that they thought of even though they had tried to suppress them). Anderson et al. did not report these crucial data.

Some researchers have questioned the basic idea behind fMRI research itself. William Uttal, author of *The New Phrenology* (Uttal 2001), argues that cognitive constructs such as thoughts and thought processes are too unpredictable to pin down to a specific area of the brain. If, as Uttal points out, there is little consensus about what constitutes many mental processes, then why should there be consensus about what parts of the brain are in charge of those mental processes? Surely the study of repression constitutes such an area of little consensus. After all, the basic argument in repression is not *how* it happens but *if* it happens. And it is worth bearing in mind Uttal's warning that fMRI results are worryingly dependent on what lab they come from, and that brain activity caused by what is supposed to be the same cognitive construct can vary by an entire brain quadrant or more.

Still, these researchers are convinced that they are onto something bigger. "There's no question that we're tapping into something that's relevant to the experiences of people who survive trauma and find the memories become less and less intrusive over time," Michael Anderson told the *New York Times* (O'Connor 2004). Interestingly, however, earlier research suggests that trauma survivors are no better than anybody else at ejecting unpleasant memories. In 1998, Richard McNally and colleagues used a method similar to Anderson's, but they looked specifically

### Women who claimed to have a history of forgetting unpleasant information did not show any special talent for doing so in this study.

at the effect of trauma history on the ability to forget positive, neutral, and trauma-related information (McNally et al. 1998). Three groups of women participated in their study. In the *PTSD* group were women who were sexually abused in childhood, and who met the criteria for *Post Traumatic Stress Disorder*. In the *trauma-exposed* group were women with similar histories who did not have PTSD. In the *control* group were healthy women with no history of sexual abuse. The women saw a list of positive, neutral, and trauma-related words. Each word appeared for two seconds, then it disappeared; half the time, the women were then instructed to remember the word they just saw, while the other half they were instructed to forget it.

All the groups remembered more words when they were asked to remember them compared with when they were asked to forget them. The PTSD group remembered just as many trauma words as the other two groups, but fewer positive and neutral words. More inter-

esting is what happened when the women were instructed to forget the words. We might predict that women with PTSD would be especially good at forgetting trauma-related words, but not show any particular tendency toward forgetting other words. Interestingly, however, all three groups performed similarly: they remembered more "remember" words than "forget" words, and there was nothing unusual about the PTSD group. Put another way, women with PTSD weren't particularly skilled in banishing traumatic words out of their awareness.

In 2001, McNally, Clancy, and Schacter did a similar study on a group of women who claimed to have recovered memories of child sexual abuse (CSA); another group of women who suspected they had repressed CSA memories but had not yet recovered them; and a control group. Regardless of the emotional valence of the words, all groups remembered "remember" words better than "forget" words. In other words, women who claimed to have a history of forgetting unpleasant information did not show any special talent for doing so in this study.

So when Anderson et al.'s subjects suppressed their words—where did they go? Drawing parallels between their research and Freud's ideas, John Gabrieli mused that buried memories can still wreak havoc. "It's lurking in them somewhere, and it has consequences even though they don't know why in terms of their attitudes and relationships" (EurekaAlert! 2004). Do these missing words still lurk in the subjects of Anderson et al.? We do not know. What

we do know is that Anderson's study is not about memory for trauma. In that sense, it has nothing at all to do with repression. Their subjects were not chosen because of a traumatic history; they were not suffering from PTSD, and the words they were asked to remember could hardly be construed as traumatic events. In fact, the closest they come to a traumatic event is pairing the word *ordeal* with *roach*.

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# Psychic Sleuth without a Clue

Despite the lack of scientific confirmation of their alleged powers, psychics continue to gain popularity in a credulous society. Some have undergone makeovers, transforming themselves from ordinary psychics to psychic sleuths and beyond—communicants with the Great Beyond, in fact. One such purveyor is Phil Jordan, whose flagging career has been given new impetus by popular TV mediums (i.e., those who purport to communicate with the dead). Jordan has climbed aboard that spiritualist bandwagon. I donned a disguise to get close to him and check out his alleged powers.

## Ascendant Stars

Among the superstar psychics is John Edward. Born John MaGee Jr., he began his career as a card reader at psychic fairs. However, when he learned that names and other “validating information” sometimes applied not to the living but the dead, he changed his billing from “psychic” to “psychic medium.” His appearances on *Larry King Live*—which has become a prime venue for spiritualistic hucksters—helped him launch his own television show, *Crossing Over*. Revealingly, on *Dateline NBC*, a program with which I assisted, Edward

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was actually caught attempting to pass off previously gained knowledge as spirit revelation (Nickell 2001a).

Edward was to forego the psychic-sleuth route, but not so the *Montel Williams* show’s resident clairvoyant, Sylvia Browne. (Born Sylvia Celeste Shoemaker in 1936, she acquired the name Brown—to which she added an *e* for effect—from the third of her four husbands.) Since childhood she has claimed to have an invisible companion, and she reports seeing apparitions, talking to ghosts, having clairvoyant visions, making psychic medical diagnoses, divining past lives (including fifty-four of her own), and possessing other powers (Browne and May 1998). Such an array of traits is indicative of what psychologists term a “fantasy-prone” personality (Wilson and Barber 1983).

Browne purports to be a “psychic detective,” and she has also gotten on the talking-with-the-dead bandwagon, appearing frequently as a medium on *Larry King Live*. Her offerings are frequently wide of the mark, but callers and a helpful Larry King help her transform frequent failures into successes. For instance, one woman, who had asked about her dead husband, learned that Browne saw “something about a clot.” The caller agreed, saying, “Yes, he had a severe brain hemorrhage at the very last minute,” although, in fact, a hemorrhage is the *opposite* of a clot (Farha 2003).

Although Browne committed to

undergo a scientific test of her alleged powers by famed paranormal investigator James Randi, she subsequently reneged. On *Larry King Live* she had agreed to take Randi’s “million-dollar challenge” in no uncertain terms: “Are you willing to take his test,” King queried the claimed clairvoyant, and she replied, “Yeah, whatever test it is.” However, her later excuses prompted Randi to write her, saying: “Of course, if you are afraid of taking the test, or you are aware that you cannot pass a simple double-blind test of your claims, you may wish to further obfuscate the matter by producing more excuses and problems.” Browne’s response was to refuse receipt of Randi’s certified letter (Farha 2003).

Among many other psychics who have discovered they too can talk to the dead are James Van Praagh (who has been overshadowed by the fast-talking John Edward) and Rosemary Altea. Both have also enjoyed some media success, including appearances on *Larry King Live* and other venues. (I debated both on radio programs in 1998 [Nickell 1998].) Still another is George Anderson, whose now-waning career was also once boosted by Larry King (Anderson 2004).

## Lesser Light

Enter Phil Jordan, psychic sleuth *cum* spiritualist. He was, he says, “raised on dreams,” and from about the age of six experienced clairvoyant visions.

Prompted in part by “severe unemployment,” he decided to offer “psychic consultations” to the public. Two years later, he launched his reputation as a psychic detective by supposedly locating a missing five-year-old boy. Although Jordan claims to have been helpful in other cases, it is this one that receives the most attention in his autobiography, *I Knew This Day Would Come: A Personal Journey to Psychic Awareness* (Jordan 1999, 58–64).

The case—the rescue of Tommy Kennedy in Tioga County, New York—began on August 3, 1975. Young Kennedy had wandered away from his family at Empire Lake, and some searchers feared he might have fallen into the water and drowned. Using psychometry (or object-reading, an alleged type of ESP) Jordan supposedly received impressions from the boy’s discovered T-shirt. Jordan announced, “He’s alive,” and, producing a sketch, said, “that’s where they will find him.” Subsequently, Jordan led searchers into the woods where “they found the exhausted five-year-old, under a tree in the exact location sketched by the psychic the night before” (Randles and Hough 2001).

Unfortunately, the story has become “mythologized,” according to Kenneth L. Feder and Michael Alan Park, who investigated the Kennedy case for my book *Psychic Sleuths* (Nickell 1994). They demonstrated how facts have been exaggerated and the story subjected to various embellishments. For example, the psychic’s own accounts (Jordan 1977, 1999) fail to mention the T-shirt, a detail given in Arthur Lyons and Marcello Truzzi’s *The Blue Sense: Psychic Detectives and Crime* (1991, 74), citing *Fate* magazine and the tabloid *National Enquirer*. It is repeated by Jenny Randles and Peter Hough in their credulous *Psychic Detectives* (2001, 86–88), which, astonishingly, ascribes the Kennedy case to 1982!

Moreover, Jordan’s map was vague and contained erroneous details. It was apparently of little use in the search, during which Jordan supposedly received vibrations telling him “to go here, to go there” (Feder and Park 1994). Jordan had, by his

own admission, chosen an area of the woods that “no one had searched” (although Randles and Hough [2001] report otherwise). “Just as I was ready to give up, he says, “I looked down and saw the footprint of a young barefoot human headed up the trail.” Even with such good luck, Jordan happened to be elsewhere—in a ravine—when other searchers in the party actually located the lost child. They had heard him “yelling for help” (Jordan 1999, 58–63).



Figure 1. Phil Jordan, alleged clairvoyant and medium, at the bar of his Seneca Falls, N.Y., hotel where he gives spiritualist readings. (Photo by “Johnny Adams,” a.k.a. Joe Nickell)

A 1989 television re-creation further exaggerated the story, leading Feder and Park (1994) to conclude, “It is curious indeed that this case, with all of its contradictions and odd coincidences, is considered an example compelling enough to be singled out in a television documentary more than a decade after the fact.” And, of course, it has also been featured in mystery-mongering books such as that by Randles and Hough (2001).

Revealingly, the powers of Jordan and his ilk were illuminated by something of a national test case, when Washington, D.C., intern Chandra Levy went missing for many months. Thousands of self-proclaimed psychics offered “clues”—Sylvia Browne, for example, visualized

“some trees down in a marshy area”—but their offerings were of no use whatsoever. After Levy’s remains were accidentally discovered in late May 2002, some of the failed psychics attempted to match their vague speculations with the known facts (Radford 2002). This is a technique called “retrofitting” and is a mainstay of alleged psychic detectives (Nickell 2001b, 125–126).

## Makeover

In 2001 Phil Jordan’s fame as a psychic seemed in decline. However, in that year he purchased The Gould Hotel in Seneca Falls, New York, and began offering “Psychic Dinner Floorshows” twice a week. Also on Saturdays he scheduled “The Spirit Connection,” which his promotional literature describes as “a show similar to *The John Edwards* [sic] *Show* on TV” (“Phil Jordan” 2003).

Jordan, who was made an honorary sheriff’s deputy for his efforts in the Tommy Kennedy case, is also a licensed funeral director and ordained minister of a non-denominational Christian church. Potentially, he could help police find a missing body, secure the crime scene, supply a coffin, preach at the funeral, and give periodic updates from the person in the spirit realm!

To assess Jordan’s spiritualistic ability, I decided to sign up for one of his shows. Since I had featured him at chapter length in a book (Nickell 1994), I decided it was best to adopt a pseudonym and to disguise my appearance. As “Johnny Adams,” a somewhat homely old yokel with slicked-back hair and nerdy hornrims, I attended Jordan’s session on August 9, 2003, with some four dozen other hopefuls. Arriving early, I soon found my small table, its nameplate lettered with a red felt marker, “ADAMS 1.”

Sitting on a stool, Jordan tried to provide readings for nearly every sitter. Some of his first readings seemed to leave the targeted individual puzzled, prompting that blank look—albeit sometimes with a nodding head—that seemed to say, “I’m trying to make a connection.” His was a standard “cold-reading” technique (in which the reader

artfully fishes for information and tosses out vague statements he hopes the sitter will interpret and validate).

His most accurate reading seemed to occur when he told a woman about "John"—described as having worn a helmet of some kind—who had passed over. The lady was baffled, but another woman several feet behind her claimed the reading as her own, and supplied some information that allowed Jordan to offer further statements she seemed willing to accept.

After a fifteen-minute break, Jordan resumed, answering a few questions and continuing with the readings. Then, looking at me, he said he really had to come to "this gentleman" next. He stated he saw a woman, possibly my mother, who had swollen legs before her passing. I regarded that as a miss. He also mentioned a man who had "raised hogs." That could describe my grandfather Nickell (who was a farmer as well as a member of the Kentucky state legislature), except that he was anything but the plain-spoken, matter-of-fact type the medium described.

Jordan also claimed to tune in on a man who worked for a railroad, but that was utterly meaningless to me. I have also been unable to relate to someone named "Charlie" whom Jordan foresaw having a positive influence on my life in the near future—how near was not specified.

One might have thought that—if he really had clairvoyant abilities—Jordan would have done better. He could have mentioned my mother's Alzheimer's, or at least foreseen the life-transforming news that arrived shortly after my reading: the discovery of a daughter (along with two grandsons) I had not known about! (Not to pick on Jordan alone, this profound fact also went unmentioned for thirty-six years by countless palmists, card readers, astrologers, clairvoyants, and mediums. It makes you wonder: where are their powers when you really need them?)

And with me so near, shouldn't Jordan at least have gotten the name "Nickell"? Couldn't he have announced, "I see an impostor," or have sensed tremendously negative vibrations coming from my direction?

After the reading, Jordan inscribed a copy of his self-published book to me, addressing me as "Johnny," and happily posed for a photograph (figure 1). He seemed, well, totally clueless.

#### Acknowledgements

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# Philosophy of Science 101

The goal of this column is to stimulate some thinking about the nature of science and, therefore, of skeptical inquiry. Usually I focus on a particular aspect of the scientific methods, sometimes discussing a single experiment, to try to learn something about how science works. Occasionally, however, it pays to step back and take a broad look at the entire forest, rather than concentrating on individual trees. In the following, therefore, I will provide a very short history of the major ideas in philosophy of science, which the reader can use as a handy reference and a key to read future and past columns on the subject.

The first philosopher to attempt to ground what today we call science in a rigorous methodology was Aristotle (384–322 B.C.), who emphasized *deduction*, i.e., the process by which one reaches a conclusion beginning with some specified premises (which are assumed to be true). Deduction is at the basis of logic, but it turns out to be of much more limited use in science, because—while an excellent way of working out the implications of a set of premises—it does not lead

by itself to the discovery of new facts about the physical world.



We have to wait until the seventeenth century for Francis Bacon (1561–1626) to propose *induction* as the core of the scientific method. For Bacon, we are able to make generalizations about the world building on a steadily expanding knowledge base from which we extrapolate and make predictions. The problem with induction is that—unlike deduction—it cannot

yield certain knowledge, but something more akin to an educated guess based on past experience (see this column, May/June 2003 and March/April 2004).

During the twentieth century things moved pretty quickly, with several major contributions to our understanding of how science works being published over the span of a few decades. Karl Popper (1902–1994) thought that science makes progress not through the confirmation of theories, but by way of their falsification. Because there is always the possibility that more than one theory can account for the available facts, Popper reckoned that a theory can never be shown to be *true*; however, if the facts contradict the predictions of a theory, surely it must be discarded, which is how science then makes progress.

Imre Lakatos (1922–1974), one of Popper's students, realized that even falsificationism wouldn't do, because scientists in fact don't throw away a theory at the first sign of difficulty. This is reasonable, since there may be other explanations for why a given prediction failed, including possible problems with the conditions of an experiment, with the analysis of the data, or even with relatively minor aspects of the theory, which could be improved and tested again. Lakatos then proposed that science works by a succession of "research programs," which can be viable and lead to new discoveries, or "degenerate." A degenerate program is eventually

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abandoned because there is a widespread sense that it is no longer fruitful.

A more radical view of research programs was famously advocated by Thomas Kuhn (1922–1996), who saw science as an alternation of two modes of operation: during “normal” times, scientists work within a generally accepted framework (a paradigm) to solve specific

Paul Feyerabend (1924–1994), who thought that there really wasn't any such thing as the scientific method, and that all approaches to truth should be given equal access to funding and public resources—the market of ideas would then establish the best ways to go. As appealing as this view can be in some circles, it led Feyerabend to seriously

Asian view, scientists consider several possible hypotheses simultaneously, and continuously confront them with the available data. After each round of data-theory match-up, they re-evaluate the likelihoods of each theory being correct, given the facts. No theory ever reaches a likelihood of one (certainty), in agreement with Popper; but no theory can truly be entirely discarded either (a likelihood of zero), following Lakatos. However, the likelihood of a theory can be orders of magnitude higher than any of its competitors, which means that the theory in question is accepted for all effective purposes as true. Until the next round, that is.

Even the Bayesian scenario, as intuitively appealing as it is to the practicing scientist, is far from providing a problem-free explanation of how science works, and the discussion among philosophers to understand how scientists do it will likely continue for quite some time.

#### Further Reading

Chalmers, A.F. (1999). *What Is This Thing Called Science?* Buckingham, England: Open University. □

**The problem with induction is that—  
unlike deduction—it cannot yield certain  
knowledge, but something more  
akin to an educated guess.**

problems, or puzzles. From time to time, however, the dominant paradigm is no longer sufficient, and an increasing number of puzzles go unresolved. This catalyzes a situation of crisis, which is resolved only when a new general framework is proposed that allows science to resume its normal activity: a paradigm shift has then occurred.

Even more radical than Kuhn was

contend that astrology, for example, should be studied regardless of what astronomers say about the illusory nature of constellations.

More recently, several philosophers of science have proposed a way of thinking about science rooted in the mathematics of the Reverend Thomas Bayes (1702–1761), and therefore termed “Bayesianism.” According to the Bay-

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NACE UN NUEVO MANTRA

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El oxígeno es bueno...

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Publicada por the Committee for the Scientific Investigation of Claims of the Paranormal



# Crashed Saucers and Saucer Conferences

The fortieth annual National UFO Conference (NUFOC), held in North Hollywood, California, this past September, represented a highly creative (if disorganized) group of UFO enthusiasts that has given the world such classic tales as the Men in Black, the MJ-12 conspiracy, and *The Mothman Prophecies*. James Moseley, franchiser and organizer of the past thirty-four conferences, has visibly slowed down since the last time I saw him. We reminisced how at the 1980 NUFOC in New York City, he had treated the speakers to a splendid dinner at the Windows on the World restaurant atop the World Trade Center. "We won't be doing that again," he remarked, making it clear that he didn't mean just for the obvious reason. In spite of a very favorable location, the preregistration for this year's conference was smaller than the state's average grade-school class size. Once a celebrated party animal, Moseley excused himself to the assembled tipplers and turned in early.

The UFO business isn't what it used to be—only about eighty people turned out for a world-class conference in the heart of Los Angeles. From a distance, the skeptic might assume that big money is being made fleecing the gullible with books, conferences, maga-

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*Robert Sheaffer's World Wide Web page for UFOs and other skeptical subjects is at [www.debunker.com](http://www.debunker.com).*

zines, and videos. The truth is, apart from the occasional blockbuster like Whitley Strieber's *Communion*, these days UFO promoters count themselves lucky if they can break even. *UFO Magazine* is struggling to resume publication, organizations are shrinking, and book sales are extremely slow. The one bright spot, selling UFO videos, is modestly profitable for only few dealers, assuming that they don't spend much in travel and shipping costs. But don't conclude from the above that levels of UFO belief are dropping. UFO belief is probably as high as ever, but with the growth of the Internet and the sensationalized pseudo-documentaries on cable TV channels, it's just gotten harder to squeeze money from the believers. UFO enthusiasts can get the titillation they are craving without having to pay much, if anything, to get it.

One recent UFO conference that did show somewhat better attendance was the First Annual UFO Crash Retrieval Conference held in Henderson, Nevada, this past November. The conference attracted about 200 attendees, meaning that its organizers probably broke even. Perhaps the most dramatic piece of evidence, as recounted by Moseley, was Art Campbell's description of a tiny shoe he says he found on the Plains of San Augustin in New Mexico, a location that reportedly had its own UFO crash. Because this shoe is so small and narrow that it could not fit even a child—at

least not any child of this earth—the implication is that the shoe must have been worn by an extraterrestrial.

The noted UFOlogist Budd Hopkins stepped outside his usual role as a promoter of UFO-abduction claims to regale the Crash Retrieval Conference with the story of a supposed UFO crash that occurred in 1963 north of Albuquerque, New Mexico. Perhaps this is a sign that UFO-abduction mania is fading and crash-retrieval claims may be taking its place. Hopkins's presentation featured "two videotaped, firsthand interviews of hospital and ambulance workers that responded to a call from state police. Upon arrival, there were three small alien bodies and an extraterrestrial craft. The bodies were X-rayed and examined, but soon after, the Air Force confiscated the evidence and told witnesses that 'this never happened' and not to tell anyone." Once again, intrepid UFOlogists got "this close" to having their eagerly sought, smoking-gun evidence, only to have it snatched away by the Conspiracy. And what is it about New Mexico that seems to induce equipment failure in UFOs as they fly over? At least half a dozen saucers must have crashed in Roswell, if all the conflicting crash-site accounts are to be believed. San Augustin, Aztec, and now Albuquerque—the state is a veritable saucer graveyard. Probably the Reticulans know it as "the New Mexico Triangle," where their craft seem to



vanish without a trace. In Arizona, some shops sell as a novelty item a Flying Saucer Pilot's License, valid in that state. If such a license is sold in New Mexico, it should be scrupulously avoided, as it seems that every attempt to fly a UFO across New Mexico results in a new crash-retrieval site.

But one alleged UFO crash that's currently getting a lot of attention took place a long way from there, in Kecksburg, Pennsylvania. According to witnesses, just before 5 P.M. on the clear winter afternoon of December 9, 1965, a "fireball" that "seemed to be under some type of intelligent control" appeared to crash in the woods near Kecksburg (see <http://ufocasebook.com/Kecksburg.html>). State police responded to reports of an object crashing, but didn't find anything. But according to some accounts, the military cordoned off the area, and hauled off an acorn-shaped metal object to some unknown destination.

The Sci Fi Channel premiered a sensationalist pseudo-documentary on October 24, 2003, titled "The New Roswell: Kecksburg Exposed." As one might imagine, it leaned heavily toward the claims that a saucer crashed and was covered up by the military, giving short shrift to any skeptical explanations.

The only problem with the so-called "Kecksburg Crash" is that the object was identified long ago, was reported to have crashed in many different places, and is known to have actually disintegrated above Ontario. What the UFO believers are calling the Kecksburg Crash is known to astronomers as "the Great Lakes Fireball of December 9, 1965." Indeed, it is one of the best-studied fireballs in history, because of the clear skies and mild weather that permitted large numbers of people to see it. It has been written up in leading astronomy journals, including *Sky and Telescope* and the *Journal of the Royal Astronomical Society of Canada* (for the details see my Web page on the case at [www.debunker.com/Kecksburg.html](http://www.debunker.com/Kecksburg.html)). Indeed, so much information was available on this brilliant meteor that astronomers were able to determine that before it encountered Earth, it was in an eccentric orbit with a

period of approximately 2.43 years, taking it from past the orbit of Mars at its farthest point from the Sun to just inside Earth's orbit, where the rock met its doom.

Even before any UFO claims began to surface about it, the Great Lakes Fireball was cited as illustrating the unreliability of eyewitness testimony. Prof. G. W. Wetherill, a professor of geophysics and geology at UCLA who investigated the incident, was quoted in *Sky and Telescope* (February, 1966): "The fireball was observed by many people in Ontario, Michigan, Ohio, Pennsylvania, and to a lesser extent in neighboring states. In newspaper accounts, a great many supposed impact sites were reported, both in southwestern Pennsylvania and eastern Ohio. Fragments were claimed to have fallen in Ohio and Michigan. These imagined happenings arose from the impossibility of estimating the distance of an object in the sky. Almost everyone who saw the fireball thought it was much closer than it really was. When it disappeared behind a house or a tree many people thought it had fallen only a few hundred yards beyond."

Nor is any of this information particularly new. Astronomer Robert Young debunked the Kecksburg Crash claims when they first appeared on the TV show *Unsolved Mysteries* in 1990, which got extremely high ratings. (See "Old-solved Mysteries: The Kecksburg Incident," *SI*, Spring 1991). Young's paper was revised and reprinted in the book *The UFO Invasion* (Frazier, Karr, and Nickel, eds. Prometheus Books, 1997). It has been carefully ignored by UFO proponents.

The Sci Fi Channel has clearly done an extremely good job of leading the public astray. A poll on its Web site revealed that 67 percent of those taking the poll believed that the object at Kecksburg was an "alien craft" versus only 27 percent who chose one of several prosaic explanations. But the next time you hear someone routing Kecksburg as "the new Roswell," at least you'll know that this new crash claim is just as bogus as the old Roswell.

But before you go off feeling too

skeptical, ponder this: the existence of extraterrestrial intelligence has just gotten five times more likely, at least according to leading British bookmakers. They recently cut the odds that the Prime Minister will acknowledge the existence of ETI by the end of 2004 from 500:1 to 100:1 (see [www.williamhillmedia.com/index\\_template.asp?file=2782](http://www.williamhillmedia.com/index_template.asp?file=2782)). No word on what prompted the re-evaluation, but perhaps they've been watching the Sci Fi Channel.

Perhaps the most exciting recent development in woo-woo land was the announcement by George Noory, host of the late-night talk show *Coast to Coast AM*, that he would be participating in an experiment in time travel with the "physicist and hypnotherapist, Irving Glotch." Glotch's device is said to perform "dimensional" rather than "physical" travel. It is said to use "eye fluttering," "special tones," and a "massaging of the nerves" to transport the fearless traveler backward (but not forward) in time. (See [www.coasttocoastam.com/shows/2003/12/17.html#glotch](http://www.coasttocoastam.com/shows/2003/12/17.html#glotch).) Glotch reminds his listeners not to confuse his time-travel device with his "teleportation" device, which works on different principles. "I teleported a small plant and a mouse from point A to point B. But cannot disclose anything else at this time on this subject."

Appropriately, *time-onaut* Noory will be wearing "an aluminum suit," although Glotch insists that this is not "necessary," but merely "helpful" in containing "the force field." Glotch, who says he has been working on his time-travel device for twenty-four years, explains, "The field of universal life is an uncharted force. George Lucas was correct in his *Star Wars* movies about the force." Noory says that the time periods he is most interested in exploring are Roswell, New Mexico in July, 1947, and the mid sixth century, to see if an asteroid impact caused the Dark Ages. Asked if Noory will be safe traveling so many centuries from home, Glotch replied "I believe he will," which seems to leave open the possibility that Noory might get stuck back in the Dark Ages, where such nonsense belongs. □



## Satan in a Sicilian Fridge

*The next World Skeptics Congress will be held October 8–10, 2004, in Italy (see [www.cicap.org/congress](http://www.cicap.org/congress)). For this reason, I am devoting four columns to popular Italian mysteries. The previous ones were on a very special liquefying blood and a case of scientific fraud related to the Shroud of Turin. Should you come to the Congress, you could take advantage of your trip to visit these famous enigmas.*

Last February 11, the Reuters news agency distributed an extraordinary news item titled “Sicilian town battles ‘demonic’ blazes.” The article began, “A Sicilian town is struggling to work out why dozens of household items from fridge-freezers to furniture keep mysteriously bursting into flame, terrifying locals and sparking theories of demonic activity.”

Since mid-January, in fact, dozens of electrical goods and pieces of furniture have been reported to “spontaneously go up in flames,” causing a great deal of damage in Canneto di Caronia, a small town perched on the Mediterranean island’s rocky coast.

“I’ve seen unplugged electrical cables burst into flames with my own eyes, but I just can’t explain it,” said a local police-

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*Massimo Polidoro is an investigator of the paranormal, author, lecturer, and co-founder and head of CICAP, the Italian skeptics group. His Web site is [www.massimopolidoro.com](http://www.massimopolidoro.com).*

man who did not want to be named. “I’ve never seen anything like it.”

Some fires have spread to engulf houses, and police decided to temporarily evacuate some forty residents. “There has been a sense of panic, and people have been evacuated from their homes,” said Salvatore Mezzopane, who works at the town hall. “We’re trying to find the cause of the fires, but there are no answers yet.”

Italian utility Enel tried cutting power to the town after the first reports but the fires continued. Tullio Martella, the regional civil defense chief, stated on television: “What is happening in this area is an unexplainable phenomenon, certainly an anomaly. I can say for sure that there are no previous cases like this one.”

The experts were no closer to explaining the phenomenon; theories ranged from arson to a freak power surge or even poltergeists or demonic activity.

“I’ve seen things like this before,” Catholic exorcist Gabriele Amorth told Italian newspapers. “Demons occupy a house and appear in electrical goods. . . . Let’s not forget that Satan and his followers have immense powers.” This is when we were drawn into the story.

### **We Have Come to Film the Devil**

*Focus*, the top-selling, popular science magazine, asked me if I could investigate the case and then report for them.

So on Friday the 13th, I went off to

Sicily along with Roberto Spampinato, a photographer from the magazine. What we found on our arrival was that the only hotel in Canneto was filled with journalists from all over the world: CNN, BBC, Associated Press, and everyone else was (or had been) there. A crew from Denmark told us that they had come to “film the devil.” Not surprisingly, they later left a bit disappointed.

The locals were quite fed up with all this media mania. They kept saying that they don’t believe in ghosts and even less in demonic activity. When an exorcist announced his intention to visit the town, he was openly invited to stay home.

But this is not what some journalists wanted. They need sensationalism, and we witnessed a few examples of manipulation, such as when a reporter from a local TV station insisted that a lady who had been evacuated—who though upset was very quiet—should instead scream and curse on camera in order to make the interview “more effective.” She did not agree and the reporter lost his temper.

We were then allowed by the firemen to enter the evacuated area and look around under their surveillance. We immediately noticed that, in contrast to what the newspapers said, this was not a “town” that had caught fire, but a few houses on a private road (an area of 350 meters), where the inhabitants are all related to each other. Damage ranged from blackened electrical cables to burned pieces of furniture. All the fires

started from cables burning, and there had never been electrical appliances behaving strangely by themselves.

There was not much else to see there. We were told that the phenomena had stopped when the area was evacuated, and the only single episode after that was a very suspicious blackening of a young man's shoe sole, right after entering his own house alone to recover something.

"At the moment, there is nothing relevant to report," says Giuseppe Maschio, professor of chemistry and head of the various experts gathered here. "The Ministry of Telecommunications measured electromagnetic fields; Enel, Telecom, and Railways technicians tried to find possible electrical leakages. Nothing out of the normal was found."

So what could cause these phenomena? "The hypothesis on which we are working now is that of a technical accident, but we still don't know the cause," says Maschio.

Others are less cautious. "I sent a few vulcanologists," says Enzo Boschi, President of the National Institute of Geophysics and Vulcanology, "to make technical measurements on possible magmatic movements down deep in the earth, but we found no indication of possible volcanic or seismic activity. If this was really a natural phenomenon, it wouldn't be restricted to such a small area. I personally find all this very odd and do not exclude the possibility of fraud. If you think about it, nothing extraordinary has happened since the area has been evacuated."

However, fraud was the only possibility that the local chief of the Carabinieri was ready to leave out.

### Mystery Solved?

After a few days, newspapers announced triumphantly that the mystery "had been solved." The explanation, said Tullio Martella, lies in an unusual theory formulated by Professor Giovanni Gregori from the National Research Centre. The theory has to do with geothermal energy coming from underground and reaching Earth's surface in spikes. According to Martella and Gregori, the little town of Canneto is on top of one of these spikes, and this is

what has caused all the phenomena.

If this explanation satisfied at least some newspapers and the Governor of Sicily, other prominent physicists, such as Professor Tullio Regge from Turin's Polytechnic and Professor Adalberto Piazzoli from Pavia's University, remained perplexed. The hypothesis, though interesting, still needed confirmation and lacked details, they wrote in a press release from CICAP, the Italian skeptics group. A few hours later, the National Department of Civil Defense stated that "it still is not possible to endorse one theory or another."



Massimo Polidoro and an expert from the civil defense examine a few burned cables. Photo: Roberto Spampinato.

We were ready to leave beautiful Sicily with no satisfactory answer when we received an e-mail message from a telephone company technician who was called right after the first few fires.

The man, Sergio Conte, told us that he was sent on location by his company, Telecom, because some thought that the problem was in their lines. He did all his testing but found that all was normal and there were no power leakages or surges. "The most common reason for an electrical cable to catch fire," says Conte, "is because it transmits too much electricity, like in a prolonged short circuit or when lightning strikes an electrical line. In both cases, there is overheat-

ing: the cable gets red hot and the insulant around it catches fire and burns anything close to it."

The situation was quite strange in Canneto, since all cases of overheating took place on exposed cables and not on those running inside walls. Conte sliced up some burned cables and noticed something else of interest: "Overheated copper is easy to spot because it becomes very dark and is quite fragile; however, here the copper inside the cables was perfectly spotless and all looked normal. This meant that the electrical explanation would not do, the heat was not coming from the inside of the cables but from the outside."

Another interesting fact was that all cables running more than three meters high, out of easy reach, had not been burned. "Also, it was clear from the type of burns that the heating was coming from a heat source placed below each cable. While I was conducting my controls, nothing strange happened, and so I can't say what had really burned those cables."

However, since there were "experts" around him who kept on saying that this was an unexplainable phenomenon, Conte tried a little experiment. "I turned my back and with a small lighter I had in my pocket, I burned up the outside of a piece of cable I was holding. When I showed it around, it was promptly found to be identical to the mysterious ones. . . ."

Whether something fishy had been going on in Canneto—and for what reasons—is up to the police to determine. A formal inquiry has now been started.

However, what many outside of Italy were led to think, as one Scottish correspondent put it, was that "one of Europe's richest and most industrialized nations is once again hitting headlines around the world as a country where superstition and fear of the paranormal remain part of modern culture." For this embarrassing result, we have to thank some journalists eager to spice up their news either by altering what the locals really said (none of them considered paranormal explanations) or by interviewing publicity-seeking exorcists and self-anointed experts. □

# Darkness, Tunnels, and Light

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*Stories of darkness, tunnels, and bright light told by those who report near-death experiences actually have a basis in the structure and functioning of the eyes, the brain, and other sense organs that operate during these experiences.*

G.M. WOERLEE

**D**arkness, tunnels, and light are wondrous phenomena sometimes reported by the dying, as well as those recovering from near-death experiences (NDEs). These experiences have been reported since antiquity. Along with many others, I first learned of these experiences from a film I saw in 1990 called *Flatliners*. The film showed amazing and improbable medical apparatus used in an equally improbable and dramatic location. Even so, I was stimulated to read more, and became fascinated by the possible physiology of all aspects of NDEs.

I am a physician specializing in anesthesiology, and have worked as a consultant anesthesiologist in Holland since 1980. An anesthesiologist is not someone who just knocks

patients out, sits down, opens a newspaper, and waits for the surgeon to finish his work; instead, he or she keeps patients alive and insensible to pain during operations, and ensures that patients survive their operations in the best possible condition. This work requires me to view all bodily and mental phenomena from a very basic physiological perspective. So in my practice, I ask myself, "How can the functioning of the body generate this phenomenon? What is the mechanism? How does it work?" My approach to the study of NDE phenomena is very similar, which is why this article is about the ways the functioning of the body can generate darkness, tunnel, and light experiences.

Darkness, tunnel, and light experiences are part of the so-called "core-NDE" described by Kenneth Ring, an eminent NDE researcher in the 1970s and 1980s. He described the core-NDE as having the following components (Roberts and Owen 1988): feeling blissful sensations; leaving the body; entering a tunnel or darkness; perceiving a bright light; and entering the light.

Wonderful, fantastical experiences . . . but what is the mechanism? How can they be explained? Many people offer explanations ranging from the preposterous to those worthy of serious consideration. Among them:

- Real experiences of a spiritual or immaterial realm. The immaterial is unseen, unheard, and unable to be sensed or measured empirically; it is unprovable.
- A dream arising from the collective unconscious. The great psychoanalyst Carl Jung proposed this idea. Indeed, inculcation of cultural identities and myths certainly occurs during the upbringing of each person. But the invocation of these aspects of each person's unconscious to explain tunnel, darkness, and light experiences is to use an explanation that is just as unprovable as is any immaterial or spiritual explanation.
- Recollection of the birth experience; an explanation proposed by the late Carl Sagan. This is a curious and dubious explanation. After all, babies' eyes are shut during birth, their brains and vision are undeveloped, and there is no way to know what a baby experiences. Furthermore, why should people undergo a repeated birth experience while dying?
- The effects of drugs and medicines. Most people undergoing these experiences are not under the effects of any drugs or medicines.
- Carbon dioxide intoxication or oxygen starvation. Many people undergoing these experiences are not suffering from carbon dioxide overload or oxygen starvation.
- A flood of endorphins (morphine-like substances in the brain), released by the dying brain. This is a compelling idea, but an inadequate explanation, and at best very difficult to prove.

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- Susan Blackmore's neural-noise theory. In 1989, Tom Troscianko and Susan Blackmore reasoned that there were more nerve cells within the visual cortex representing the central parts of the retina than there were representing its peripheral parts. A computer simulation of increasing neural noise in the visual cortex induced by drugs or disease revealed a blob of white light gradually increasing in size, which, when viewed on a screen, gave viewers the sensation of moving down a tunnel toward a bright light and finally being enveloped by the light (Blackmore 1991). An elegant idea, but it neglects basic facts, such as the relative oxygen consumptions of retina and brain, as well as the fact that people can "see the light" while at the same time seeing things around them. These facts render the neural-noise theory an inadequate explanation of tunnel and light experiences, except perhaps for situations where there is epileptic nerve activity within the visual cortex.

What is another explanation for these experiences? After all, they are real experiences. People who have undergone them are neither mad nor hysterical, and they really have undergone darkness, tunnel, and light experiences. But how? I began my study with the light experience, distilling its properties from the stories I heard and the many reports I read. These properties are: people see bright light; the light does not hurt the eyes; this light is seen not only during NDEs undergone by apparently unconscious people, but also reported by the conscious dying; and no one else can see this bright light.

### 'The Lovely Brightness'

Any successful physiological theory about the light experience must be able to explain these properties. After my medical studies, I left Australia to specialize in anesthesiology in England. While there, I worked in the now defunct Hackney General Hospital, as well as the equally defunct Mothers' Hospital. This latter was an obstetrics hospital in the impoverished district of Clapton in London's East End. Because I'd practiced there, a report related by Sir William Barrett in the book *Death-Bed Experiences* attracted my attention (Barrett 1926). I knew the hospital, how the rooms appeared, and how they were lit, as well as the nature of the women who came there to have their babies delivered. In Barrett's report, a dying woman first saw only darkness, and subsequently saw a "lovely brightness," as well as "bright forms." The obstetrician reported her observations. At one point she wrote: "But then she turned to her husband, who had come in, and said, 'You won't let the baby go to anyone who won't love him, will you?' Then she gently pushed him to one side, saying, 'Let me see the lovely brightness.'"

A matron was also present, and reported: "Her husband was leaning over her and speaking to her, when pushing him aside she said, 'Oh, don't hide it; it's so beautiful.'"

These two sentences reveal that this woman saw the "lovely brightness" because her medical condition caused her pupils to widen. The woman was dying of heart failure, and lethal heart failure causes oxygen starvation; severe oxygen starvation causes the pupils to widen. Furthermore, sympathetic nervous system activity is maximal during lethal heart failure, and this also causes the pupils to widen.



No one else in the room saw the bright and wonderful light, and nowhere does this report mention that the lighting in the room was increased. The size of the pupils of the other people in the room did not change because the level of illumination in the room did not change, so they did not see the bright light. This woman pushed her husband aside because he did indeed block the light. So she saw bright light because her pupils widened, admitting more light into her eyes. Light enters the eyes through the pupils, and the diameter of the human pupil varies from 1 millimeter to as much as 10 millimeters. A small calculation reveals the magnitude of the effect of pupil widening: the area of the pupil through which light is admitted into the eye is a circle, and pupil area =  $\pi$  (pupil radius)<sup>2</sup>. This means that the amount of light entering each eye can increase by as much as 100 times.

Pupil widening is indeed a likely reason she saw a "lovely brightness." Another sentence in this same report also caught my eye: "She lived for another hour, and appeared to have retained to the last the double consciousness of the bright forms she saw, and also of those tending her at the bedside. . . ."

Fascinating—and also very revealing. As an amateur photographer, I realized this was also an effect of pupil widening. Pupil widening reduces the depth of field. A person whose pupils are widely dilated not only sees bright light, but only clearly sees people upon whom the eyes are focused, while all other people are seen as bright and blurry forms. So this unfortunate woman interpreted the bright and blurry images of out-of-focus people elsewhere in the room as "bright forms."

The optical effects of pupil widening were very likely the

cause of the "bright light" and "bright forms" seen by this woman. However, to her and her family, as well as to all observers, the experiences and observations she reported while dying were not just mental and optical manifestations of a mundane biological event. Instead, they were an intense and wondrous confirmation of deeply held socio-cultural beliefs in a life after death. This story beautifully illustrates how pupil widening due to a multitude of causes can arouse visions of "bright light" and "figures of light."

### Oxygen Deprivation

At the same time as I read this account, I was also studying the effects of oxygen poisoning and oxygen starvation, and learned that both tunnel and darkness experiences could be caused by oxygen starvation. Oxygen is an essential ingredient in complex chemical reactions within all cells of the body, generating vital, energy-rich chemicals. Oxygen starvation can occur when there is: too little oxygen in the air; abnormal lung function; abnormal heart function; too little blood; anemia; abnormal red blood cell function; obstructed or severed blood vessels; abnormal cell function; or any combination of one or more of these factors.

Oxygen starvation causes failure of all the organs and tissues of the body, and the eyes and brain are most sensitive to its effects, failing before any other organs. Furthermore, the retina has a higher oxygen consumption than the brain, which is why oxygen starvation causes the functioning of the retina to fail before significantly affecting the functioning of the brain.

Oxygen starvation does not cause all parts of the brain to fail at the same time. The brain stem, which generates

consciousness, is the part of the brain most resistant to oxygen starvation. Therefore, oxygen starvation will cause vision to fail before causing a loss of consciousness. And indeed, the experience of fainting proves this. Fainting is due to a sudden, fortunately temporary, failure of blood flow to the head, resulting in oxygen starvation of the brain and loss of consciousness. Just before losing consciousness, many people notice that everything suddenly "went gray," "went dark," or "went black." Perception of grayness or darkness is a conscious experience, so these people are actually saying that their vision failed before they lost consciousness. Some people also report tunnel vision just before losing consciousness.

Oxygen starvation can cause both tunnel and darkness experiences. The reason for this lies in the structure and functioning of the blood supply of the retina. The macula is the optical center of the retina; it has the greatest blood supply, while the flow of blood to the retina decreases with distance from the macula according to the inverse square law. Yet the oxygen consumption of each part of the retina is much the same, so oxygen starvation will cause failure of peripheral vision before causing total visual failure. Indeed, experiments with oxygen starvation in human volunteers prove this fact. This is why tunnel experiences occur only in NDEs caused by oxygen starvation, while toxins and poisons cause a "pit experience" before causing failure of vision. So oxygen starvation explains why not everyone has a tunnel experience during an NDE. Oxygen starvation also explains why the tunnel experience is not a true component of the NDE, but is instead a manifestation of the cause of the NDE (Greyson 1983).

### Somatic Sensations

Aha, say the critics, but during a "tunnel experience" people feel themselves moving, flying, or being drawn through a tunnel toward a light or entering the light. So they say oxygen starvation cannot be the cause of tunnel and light experiences. Yet oxygen starvation explains these sensations very well. Furthermore, a close study of the way oxygen starvation affects conscious perception of sensations explains all these things without the necessity of invoking a human soul, paranormal sensations, or immaterial spirit worlds.

The human brain is about one and a half kilos of jelly-like tissue contained within the protective confines of the hard bones of the skull. Mind is a product of brain function, and all sensations enter the brain as signals conducted into the brain along sensory nerves. The mind only knows what is happening within the body, to the body, and in the world around the body by interpreting the sensory nerve signals conveying sense data into the brain. So if these sensory nerves transmit signals into the brain indicating that the body is moving, falling, or flying, the conscious mind *perceives* the body to be moving, falling, or flying. Furthermore, if the brain malfunctions, even

normal sensory signals transmitted into the brain may be interpreted incorrectly. And the malfunctioning brain may even misinterpret normal sensory signals as sensations of movement, falling, or flying. Oxygen starvation is a common cause of brain malfunction, as well as the cause of the terminal loss of consciousness of more than nine in ten dying persons (Murray 1997). And oxygen starvation causes malfunction of muscle spindles, the sense organs that provide the brain with most of its information about body position and movement. Muscle spindles are special muscle structures sandwiched between the fibers of every muscle. There is about one muscle spindle per 1,000 ordinary muscle fibers. Muscle spindles are both sense organs and muscle fibers, sensing and transmitting

## Oxygen starvation is a common cause of brain malfunction, and causes malfunction of muscle spindles, the sense organs that provide the brain with most of its information about body position and movement.

to the brain sensations of weight, of movement, of falling, of floating, and of flying. Moreover, the tensing and relaxing of muscle spindles relative to the surrounding muscle fibers also generates similar sensations.

Severe oxygen starvation causes convulsions. Muscle spindles sense these movements and transmit the sensations to the brain. Victims may also sense others attempting to aid them. The brain malfunctions during oxygen starvation, causing muscle spindle tension to differ from the tension of the surrounding muscle fibers. Body parts where muscle spindles are relaxed relative to surrounding muscle fibers feel heavier than normal, while body parts where muscle spindles are tenser than the surrounding muscle fibers feel lighter than normal. Again, all these phenomena have been well established experimentally.

During NDEs caused by oxygen starvation, a combination of brain malfunction, abnormal muscle spindle function, random movements due to convulsions caused by oxygen starvation, and movements of the oxygen-starved person's body made by people treating and helping the person all combine to generate sensations of movement. When this is combined with a total loss of vision, tunnel vision, or the effects of pupil widening, sensations of moving through darkness or a tunnel toward light can occur. Some people also say they felt themselves being "drawn to the light." This is quite possibly a result of the initial restoration of central vision, followed by an increasing restoration of peripheral vision as oxygen supplies to the eyes increase. A person undergoing such an experience would first see a small spot of light at the end of a tunnel which would gradually increase in size to envelop the whole

visual field. This would give the illusion of moving toward a light at the end of a tunnel, and even of entering the light as retinal function was restored.

All these things make it possible to explain and understand the sequence of events during NDEs caused by oxygen starvation. Consider a report in *Return From Death* (1986), written by Margot Grey. Grey reported the story of a woman who nearly died in childbirth. This woman reported that "I was moving very rapidly down a long, dark tunnel. I seemed to be floating. I saw faces which came and went and who looked at me kindly, but did not communicate. I did not recognize them. As I got nearer to the end of the tunnel I seemed to be surrounded by a wonderful warm glowing light."

The terminal loss of consciousness while dying during childbirth is always due to oxygen starvation caused by convulsions that can occur in late pregnancy (due to a toxic condition called "pre-eclampsia"), massive blood loss, heart failure, amniotic fluid embolus, hyperventilation, etc. An explanation of the sequence of events related by this woman is that she lost consciousness and all memory of events. Her resuscitation restored consciousness and her memory, but the oxygen supply to her retina was still insufficient to restore vision and normal sensory function. All this caused sensations of moving in a dark tunnel. Further restoration of the oxygen supply to her body restored central vision, which together with widened pupils caused her to sense movement toward a bright light at the end of a tunnel. Her recovery progressed, and retinal function was fully restored, but not normal vision or brain function—so she felt herself moving out of the tunnel to be

enveloped by the light. Finally, delivery rooms are kept warm so the newly born babies do not cool down after birth. This was the warmth she felt.

Darkness, tunnel, and light experiences are wondrous, seemingly paranormal experiences. Nonetheless, it is evident that they can be explained by the body's responses to oxygen starvation. The combination of tunnel and light experiences can only be explained by oxygen starvation, and nothing else. Other associated experiences, such as darkness and out-of-body experiences, can also be generated by other changes in body function induced by a wide range of different conditions. This explanation of tunnel-and-light experiences does not constitute conclusive proof that this is the only mechanism by which these experiences can arise. After all, this explanation does not preclude paranormal or immaterial explanations. But it is an alternative, provable physical explanation that accounts for all aspects of these experiences, as well as making it possible to predict when these experiences are likely to occur.

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# Nurturing Suspicion

## What College Students Learn About Science

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*Skeptics complain about postmodern attacks on science in college “science and society” classes but don’t address the reasons these criticisms are so persuasive. When college students don’t learn about the complexities and social dimensions of scientific inquiry, they are vulnerable to the egalitarian appeal of postmodern relativism. Skeptics must confront this problem.*

PHIL MOLE

Six years ago, while finishing my graduate public-health coursework at an Illinois university, I took a class that forged my interest in skepticism and critical thinking. The course, called “Behavioral Sciences in Public Health,” certainly had anything but this purpose among its educational goals. This course was a local species of a relatively new genus—the “science and society class,” examining the cultural and social contexts and implications of scientific discovery. Students frequently encounter these courses in graduate school, usually as an interdisciplinary-studies class required by their department curriculum. While the specific content of these classes varies, a surprising number of them teach a highly radical view of science that exclusively focuses on its real and imagined deficiencies.

Much of the time, these classes confuse rather than clarify issues pertaining to science and society. For example, the syllabus for "Behavioral Sciences and Public Health" promised to help students "become sufficiently confused about the complexities of professional life," to teach them information needed to "critically participate in public health-care practices" and create a "thick reading of one's social position." I am still not sure what the first and last objectives mean—perhaps I was "sufficiently confused." But I learned soon enough that the class was not interested in teaching students to critically participate in public-health care or in anything else requiring sci-

**The course was not a balanced, critically informed discussion of the merits and limitations of science.**

**It was a lopsided diatribe against the arrogance of science and its suppression of other, allegedly valid "ways of knowing."**

entific literacy. The course was not a balanced, critically informed discussion of the merits and limitations of science. It was a lopsided diatribe against the arrogance of science and its suppression of other, allegedly valid "ways of knowing."

We read articles claiming the language, assumptions, and methodologies of science to be inherently sexist and imperialistic, and fundamentally opposed to the role of intuition and the expression of femininity. An article by Ruth Hubbard maintained that scientists construct fact claims in order to justify their own economic positions and prevent the social mobility of women and ethnic minorities (Hubbard 1990). We perused the writings of Sandra Harding and Luce Irigaray and read more testimony that science represents the ideologies of white males seeking to disenfranchise, deflower, and discredit femininity at every opportunity. These authors discussed "alternate epistemologies," suppressed by chauvinist scientists, and considered conventional science inherently inauthentic. Harding directly implicated the ethics and methodology of traditional science in "wrong-headed environmental policies and the long-recognized alienation that people in industrialized societies feel from their culture, communities, and 'true selves'" (Harding 1996). Other articles went even further, comparing profes-

sional medical skepticism of alternative medicine to the persecution of witches and heretics in centuries past.

I recently completed a second "science and society" course as part of a graduate educational-studies curriculum. This course, called "Introduction to Research Purposes and Methodologies," proved remarkably similar to the earlier course. We learned repeatedly that science was seriously flawed and that scientific inquiry was only one of many possible methods of learning about the world. There was a similar emphasis on feminist alternatives to science and the same emphasis on "patterns of male dominance" inextricably woven

into the methodology of science. A paper by Lee Harvey presented a new paradigm of social research, rejecting the traditional ethnographic goal of objective explanation. Lee alleged that the conventional approach reeks of cultural presumptions and moved to replace it with a methodology "which attempts to link the detailed analysis of ethnography to wider social structures and systems of power relationships in order to get beneath the surface of oppressive structural relationships" (Harvey 1990). Many of the other papers, with varying intensity, renewed the charge that science is bigoted and exclusionary. To the authors of these articles, science is but a flickering shadow in Plato's cave and can claim no superiority to other methods of describing ultimate

reality. If the light of scientific reason dispelled the rival shadows of intuition, old-world folk medicine, and anecdotal evidence, these authors preferred to praise the darkness.

### **An Incomplete Education: What Science Classes Do Not Teach**

My initial exposure to the criticisms of science in "Behavioral Sciences and Public Health" stimulated me to learn why these critics were reaching such radical conclusions. To learn more about the source of their ideas, I had to train myself in philosophy of science and the rules of critical thinking. As a result, I can now see even more clearly than ever that the authors usually included in "science and society" courses are deeply mistaken in their claims that science is not superior to other systems of inquiry. They are also mistaken in their judgment that science reflects only sexist and imperialist assumptions. But I can also clearly see that their radicalism is not possible without a deep ignorance of what science is and how it works. Unfortunately, science teachers and other supporters of science play a large part in propagating this scientific ignorance. Skeptics are often quick to disparage postmodern critics of science but slow to address the larger science-education problems that allow their message such a large measure of success.

Both critics of science and the college students they seek to indoctrinate obtain their scientific knowledge from science classes in high school and college. Both groups leave these classes with an incomplete image of how science works, and

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this ignorance shapes their receptiveness to radical deconstructions of science. Too often, science textbooks and professors present science as a codified body of theorems and facts, and ignore the messy history of arriving at our current knowledge. To a point, this strategy is understandable. There is only so much time in a semester, and teaching about all of the false starts, dead ends, and conceptual confusions in the history of science threatens to gobble up valuable class time. Yet we cannot properly understand how science works if we do not pay due justice to this complexity and learn how and why scientists choose one scientific theory instead of another. This comprehension requires us to examine what rival theories coexisted with the theories that eventually gained acceptance and the reasons these theories seemed attractive to scientists of that time. Why, for instance, do physicists no longer believe an invisible ether permeates all of reality? If the ether is simply a silly outlandish idea, why did so many brilliant scientists think the ether existed in the first place?

When we examine specific episodes in scientific history, we see that social and personal biases do not necessarily impede the search for objective truth. James Clerk Maxwell developed his laws of electromagnetic radiation in the nineteenth century while retaining the common cultural belief in the existence of the ether. Maxwell even believed the existence of the ether was necessary for the propagation of electromagnetic waves. After all, the existence of a wave apparently implied the existence of a medium. Just as ocean waves require water to travel, electromagnetic waves also require a medium through which to be transmitted. Einstein later rendered the concept of the ether unnecessary with his theory of relativity, but Maxwell's equations are no less valid. The truth of Maxwell's equations did not depend on the reality of the ether, because his theory contained much else that is true and useful.

Similarly, the existence of scientific bias does not undermine the validity of evolution. Charles Darwin was thinking of Thomas Malthus's *Essay on the Principle of Population* when he conceived of the "struggle for existence" at the center of his theory of evolution by natural selection. He was working with a Victorian cultural bias toward individualism that predis-

posed him to stress competition for limited resources in his model of evolutionary change. This emphasis on selection allowed him to explain how new species could form through a series of modifications but did not emphasize the role of non-selective forces in evolution. Since Darwin's time, evolutionary researchers of different theoretical persuasions have correctly demonstrated that much evolutionary change does not reflect adaptation due to direct competition between species. We currently realize that selectively neutral mechanisms such as genetic drift play major roles in evolution, but we do not reject Darwin's *The Origin of Species*. Darwin's great book still contains the most cogent demonstrations of the reality of evolution and still provides the basic intellectual framework for modern discussions of evolution.

These examples show that scientific truth is not all or nothing and progress does not cease because scientists have cultural and ideological biases. We simply need scientists to differ in their particular biases and a system of scientific inquiry open to new viewpoints and facts. This is not to say that there have not been many egregious errors in the history of science and many times when sexists and racists used the veneer of scientific fact to bolster their dubious claims. Nevertheless, even socially biased scientists can and do make lasting contributions to scientific knowledge. The nineteenth-century scientist Paul Broca used comparative anatomical stud-



ies to "prove" blacks were mentally inferior to whites, but he also made important discoveries in cognitive neuroscience. He completed important studies of aphasia—an inability to use language resulting from a localized brain injury. We may rightly deplore his racism, but we cannot erase his accomplishments. We also cannot ignore the fact that other scientists eventually exposed the flawed methodology of his comparative brain studies and debunked his racist conclusions. Competing biases among scientists are a major reason for the success of scientific inquiry.

### **Credulity: The Consequence of an Incomplete Education**

What happens when students never learn about the historical development of science—when they never comprehend the

significance of the scientific method? They leave their science classes with a highly idealized, intellectually impoverished view of science that is highly vulnerable to attack. When they encounter modern cultural criticisms of science in "science and society" classes, they have no larger perspective to balance against these claims. They never learned that great scientists have often been fantastically wrong and never learned about the role of bias in developing scientific theories. As a result, any evidence that scientists do have bias, or that they sometimes make mistakes, causes them to question the validity of the entire scientific enterprise. In Christopher Hitchens's memorable phrase, "utopia becomes the subconscious enabler of cynicism." If students initially learned anything about the complex social history of science, they would have some intellectual armor against the ideologically charged claims of modern science critics.

**The greatest irony hidden from modern critics of science is that they are actively undermining the very foundation of the democratic society they claim to cherish. Democracy can flourish only in a climate of rationalism that sees some ideas as true and others as false.**

Even worse, teachers of "science and society" classes are doing very little to broaden the perspectives of their students. Students study only the ideas of the far, radical left—the "marginalized" souls who scoff at criteria of judgment and decry the elitism of anyone claiming to have real knowledge about the empirical world. Instructors do not provide exposure to responsible scholarship about the social underpinnings of science or any works written from non-radical perspectives. The absence of a more balanced selection of readings is especially puzzling, given the abundance of quality material available in most good bookstores or in peer-reviewed journals. Yet neither of the "science and society" classes I took bothered with these texts. Students did not have opportunities to read such fair-minded works as David Hull's *Science as a Process*, Helen Longino's *The Fate of Knowledge*, Michael Ruse's *Mystery of Mysteries*, or any number of important articles from history-of-science journals such as *Isis* and *Osiris*. Instead, students read the same tired bromides about the "social construction" of scientific knowledge and the oppression of "the Other"—with the latter word usually capitalized lest we miss the message. Indeed, none of the readings in either class I took cited any respected science historians or philosophers or even acknowledged their existence.

As currently taught, "science and society" classes do not nurture the critical thinking abilities of students. They only nurture a deep suspicion toward all truth claims, particularly those claims perceived to clash with the political ideals of students. The corollary to this rejection of truth claims, paradoxically, is the promiscuous acceptance of truth claims. If there are no valid criteria for accepting the truth of science, then virtually any idea about the empirical world is valid and there are no authoritative reasons to reject or accept any particular idea. There is only one idea students believe is objectively true, and that is the idea that all truth is relative. And in a climate of relativity, they feel free to campaign for their own subjective visions of reality and accept those ideas that best accord with their intuitive sense of what the world ought to be like. They dismiss questions about what the world actually is like as hopelessly naïve or symptoms of the dreaded disease of elitism.

Much has been said about the influence of postmodernism on radical critics of science, but my own experience convinces me that we are simply seeing a modern variation of a long democratic tradition: mistrust of authority. Postmodernism, with its fancy jargon about social constructivism and observer-mediated realities, has simply reinvigorated the anti-elitism and ideological relativism always present in democratic societies. In a deep sense, postmodern relativism is simply a new language for reclaiming the emotional attachment to egalitarianism fostered by grammar and high-school history classes. Students taught a sanitized vision of modern society in which the tenet that "all men are created equal" later bumps against the hard realities of inequality and the role scientists have played in strengthening those inequalities. The radical relativism of postmodernists touches just the right chord with these jaded students. In a world where heroes have clay feet and justice is elusive, postmodernism provides the solace of believing that egalitarianism still thrives in the intellectual plane. If all men are not created equal, they can at least take comfort in the equality of ideas.

Thus, most critics of science are acting from admirable motives. When they complain of the marginalizing effects of traditional science, they believe they are acting in the spirit of equality. They believe that science isolates and trivializes other groups to solidify its own status, and they want to rescue these isolated voices from perceived oblivion. But they fail to realize a fatal flaw in their approach. By emphasizing only the flaws and biases of science, they present a skewed image that not only contradicts responsible scholarship but also erodes both public understanding and support of science. In a society largely dependent upon scientific knowledge, these are dangerous ideas. Indeed, the greatest irony hidden from modern critics of science is that they are actively undermining the very foundation of the democratic society they claim to cherish. Democracy can flourish only in a

climate of rationalism that sees some ideas as true and others as false. Science, with all of its limitations, is still the best methodology for discovering this truth.

This realization, however, requires some familiarity with the real methodology and ideas of science—not just postmodern caricatures of them. It is quite easy to convince students to devalue science when they never learned what science is in the first place. Teachers innocent of the slightest knowledge of science cultivate the ignorance of students, and they even convince students that this ignorance serves progressive political interests. They encourage students to adopt a purely political view of science and do not encourage them to acquire the scientific knowledge and critical thinking skills necessary for informed discussion. The student emerges from “science and society” classes with no valid criteria for evaluating scientific arguments and comes to believe that only political and rhetorical considerations really matter. Who makes the most impassioned speeches for political egalitarianism? Who seems to be sticking up for the rights of the underdog? Students learn to banish the notion of scientific objectivity with a shrug and embrace the rhetoric of anyone invoking the ideals of equality and democracy. Their minds become mere flotsam and jetsam adrift on the waves of rhetoric. You can almost feel the collective shifting of their opinions during class discussions, while their peers present reductive, emotionally appealing summaries of various positions in complicated scientific debates. Would they so easily succumb to these ideas if they had learned more about realities of scientific inquiry instead of only the idealized fantasies presented by science teachers or the dystopian fantasies of radical science critics?

### Conclusion: What Then Is to Be Done?

Skeptics should acknowledge the depth of the problems entangled with postmodern criticisms of science. Too often, we have ridiculed the radical critics without trying to understand the appeal of their ideas or the conditions necessary for the acceptance of their message. The preceding analysis should demonstrate that most students learn nothing of importance about the nature of science in their core science classes, and this ignorance leaves them receptive to alternate models of scientific inquiry. Not surprisingly, students are most appreciative of those descriptions of science that best satisfy their own longings for justice and equality. After learning that science is much more contentious than their high-school and college courses led them to believe, these students crave emotional solace. They want the kind of certainty that only relativism can provide, in which indifference to the very idea of authority erases all real doubts. “Science and society” classes address this need and fill the intellectual void partially created by the incompleteness of the students’ earlier science courses. As a result, postmodernism erases the helpful doubt that stimulates real thinkers to rigorously challenge their own preconceived notions and pursue the difficult pleasure of objective truth.

To remedy this situation, we have to change the educational process itself. First, we need to address the history and

philosophy of science in core science curricula. Presently, students in high-school and college science classes learn only the end products of scientific inquiry, and none of its inherent methods and ideas. If students are to fully understand the successes of science, they need to learn about its failures and the historical contexts of scientific ideas. They have to understand the way science thrives from competition between rival scientists with opposing biases and ideologies. This knowledge will give students a broader intellectual defense against the plaintive but ill-informed claims of modern science critics.

Some students, unfortunately, enter their “science and society” classes with no core science courses to their credit. For this reason, universities need to ensure that these classes provide students with a balanced perspective about science, not simply indoctrination into radical politics. Students should have the opportunity to read what experts in the philosophy and history of science have to say and understand the logic of scientific inquiry. Classes that do not provide these opportunities cannot claim to provide a responsible education. They leave students poorly prepared for participation in a scientific, democratic society.

Throughout American history, there has always been a tension between the productive ideal of allowing open pursuit of truth and the counterproductive ideal of simply subordinating all questions of truth to public opinion—the establishment of tyranny by majority. If the latter ideal comprises the current goal of “science and society” classes, the former ideal may prove an effective remedy. A democratic malady requires a democratic cure. We skeptics need to focus our attention not only on exposing the sham egalitarianism of postmodernism but also on showing that science is a better foundation for democratic ideals. As scientist Robert Lawrence Kuhn recently stated, “Science needs democracy as much as democracy needs science. Vigorous scientific research reflects democratic principles in action, and free and open scientific inquiry cannot take place without the protective support of a robust democracy” (Kuhn 2003). If we try to teach students about the complexities of scientific inquiry, we can lessen the nurturing of suspicion and more effectively nurture the thinking skills needed to become that greatest of rarities in modern society: an informed citizen.

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# The Cold War's Classified Skyhook Program

## *A Participant's Revelations*

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*Classified high-altitude, long-duration flights of huge Skyhook balloons, which often returned their secret payloads to the surface, began in 1947 and continued for several decades. This secret Cold War program was the likely progenitor of many key aspects of UFO mythology.*

B.D. GILDENBERG

I was busy calibrating instrumentation for top-secret Project Mogul in the spring of 1947. In retrospect, I was totally unaware of the project's actual identity. My security clearance was for the lower rating of confidential. I was unaware of the project title for another forty-eight years, until 1995.

Welcome to the arcane world of classified Skyhook programs and Cold War intrigue. In this review, I hope to reveal many of those once-classified programs, how they generated UFO mythology, and why that relationship has not been fully addressed.

I write from a thirty-five-year professional career as a Skyhook balloon specialist and direct experience with most

of the programs in these revelations. I was also an investigator for a special Project Blue Office and years later worked on the Pentagon Roswell report.

A Skyhook balloon provides constant-level performance at a predetermined altitude. It is usually constructed of special plastics and can lift tons of payload for durations of days or longer. The latter capability was once highly classified. Skyhook balloons were huge. The average size of those discussed in this article was double the six million cubic feet of the Hindenberg. Their diameters were about 300 feet with a flaccid length of 430 feet. Primarily cruising in the stratosphere, the balloons change color at high altitudes during sunrises and sunsets, while the Earth below is almost dark. These characteristics equate to a superb UFO generator.

It is therefore more than a coincidence that the birth of this vehicle in 1947 coincided with the origin of the twentieth century UFO epidemic. That epidemic was highlighted by the Roswell incident, with Project Mogul the prime seed. That relationship has already been detailed in a number of SKEPTICAL INQUIRER articles (for example, Thomas 1995).

### The Skyhook Program

The prime launch site for Project Mogul was Alamogordo Air Base in New Mexico, west and therefore upwind of Roswell. The 1947 launches were in June and July, but there were initial UFO reports around the East Coast prior to the summer (Brookesmith 1995). These were preliminary test launches from New Jersey and Long Island.

There were also sightings in the summer of 1947 in the western and northwestern United States. A 1949 Air Force investigation (Trakowski 1949) could not correlate those sightings with Project Mogul, but the Air Force was unaware of a Navy program launching cluster balloons in Colorado that same summer. Coordination between branches of the military was limited in the years just following World War II. Accordingly, the dilemma of that 1949 report added fuel to a developing UFO mythology.

Clusters of weather balloons launched from both New Mexico and Colorado triggered reports of flying saucers sighted in formations throughout the West. They briefly preceded plastic Skyhook balloons, but their performance as constant-level vehicles was marginal.

An initial government cover-up for Project Mogul saw an assembled crew not associated with the project launching a similar configuration, but without the classified payload. Newspapers were invited to the launch again at Alamogordo Air Base. Years later, as the Roswell legend resurfaced, UFO proponents denounced Project Mogul as a cover-up for their alien event.

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At Alamogordo AFB headquarters, Mogul was listed as a guided-missile program. That represented a further cover-up procedure. The actual purpose of the project was stratospheric detection of distant nuclear bomb tests. Unknown to Roswell enthusiasts were classified programs that operated for decades afterward, based on Project Mogul technology.

One unclassified derivative was Project Blue Book, the Air Force investigation of UFOs. An initial sponsor was the Air Material Command, headquarters for Project Mogul. Blue Book originated in January, 1948, under the title Project Sign. Project Mogul prompted the initial development of a USAF Skyhook facility at Alamogordo AFB (today Holloman AFB). It was eventually governed by the Cambridge Research Laboratories in Massachusetts and became the prime USAF Skyhook launch site, still active today. Project Blue Book had outlying reporting offices throughout the country. Their function was to gather UFO reports and send them to the Blue Book main office at Wright Field, Ohio.

At Holloman AFB, the Blue Book office was situated in our Skyhook Balloon building. That choice was biased by the significant percent of reports generated by our relatively new vehicle. This office was also unique in that it, like the Wright Field Center, analyzed reports. I joined the Holloman Skyhook group in 1951 for a thirty-year tour and immediately became involved with Project Blue Book.

There was a more discrete reason for this special Blue Book role. In 1951, we became the primary center for unclassified Project Moby Dick. In at least one pro-Roswell book that project was erroneously dated 1947 and classified as secret (Randle 1994). Such misinformation contributes to the mythology of government cover-ups.

### Rumors and Cover-ups

Project Moby Dick's stated purpose was to study stratosphere wind trajectories, as defined via three-day Skyhook flights. After training for over a year at our location, crews and equipment moved to three West Coast sites for the operational phase. Although the announced purpose did result in final reports containing those stratospheric trajectories, there was actually a secretive phase. Moby Dick was in fact a cover-up for top-secret project WS-119L.

Beside the alphanumeric title, secret projects have secret names that vary for different phases. This program was called Project Gopher at our Alamogordo AFB launch site. It later accumulated titles including Grayback, Moby Dick Hi, Gentrix, and Grandson.

Even the WS prefix was a cover-up, since it was not a weapon system. The actual project goal was balloon reconnaissance of the Soviet Union. The entire subject is extensively covered in an excellent book by historian Curtis Peebles (Peebles 1991). Project Moby Dick was actually gathering trajectory data for Project Gopher, although the information also generated unclassified data for meteorological applications.

We flew five Gopher (WS-119L) test flights in 1951 and 1952 from our Air Force Skyhook Center. The payload was kept in a hanger during flight preparation under continuous

armed guard. Outsiders noticed this and ensuing rumors eventually generated tales including a secret Project Aquarius. In Randle's *UFO Casebook* (Randle 1989) he notes, "a possible Project Aquarius; Headquarters may be in Alamogordo with an important Branch in Montana." In fact, we did have an auxiliary training camp in Montana. The mythology of Project Aquarius is nebulous but has something to do with an MJ-12 committee maintaining communications with Roswell aliens.

All this intrigue came to a head when the CIA suddenly showed up at our office and at launches. UFO reports peaked in 1952, as our local Skyhook activity increased from ninety-two hours the previous year to 694 hours aloft. Moreover, launches from the Moby Dick West Coast sites were commencing. Eventually they, along with additional sites in Missouri and Georgia, contributed 640 flights.



Pre-flight preparation of four-ton reconnaissance camera launched by a Skyhook balloon.

The CIA requested that we not identify most of those sharply increasing Skyhook reports. The strategy was to generate a UFO outbreak over the USA extending to the USSR when our WS-119L Skyhooks arrived there. Ironically, the ploy initially worked, since the Soviet Air Force could not intercept the first wave. They allowed their public to play our UFO game. The strategy ended after a few leaking Skyhooks were shot down and the payloads were exhibited, along with protests, to President Eisenhower.

Thus, complex interplay of Moby Dick, WS-119L, and UFO reports defined the unique role of our Blue Book office in that era. Since top-secret WS-119L was not declassified until more than thirty years later, that intrigue can only now be addressed.

Although initial phases of WS-119L were launched from Europe and Turkey, a final phase, WS-461L, was launched from the Pacific. There was a direct parallel to Moby Dick, where unclassified Project White Cloud launched Pacific

flights to obtain trajectory data for WS-461L. In the April 1994 issue of *Omni* magazine, a retired airman proclaimed solid proof of UFO activity. He had glimpsed logs from the European NATO Command Center for 1958. They reported UFOs coming out of the USSR at 100,000 foot altitudes. That nicely described WS-461L flights cruising in from the Pacific Ocean launches.

The entire Skyhook reconnaissance program produced marginal data, but its recovery techniques phased into satellite programs. Moreover, the Soviets were so impressed they actually developed several high-altitude aircraft dedicated to intercepting our Skyhooks! In the 1960s, Premier Khrushchev developed a habit of banging his shoe on the table in protest at the UN. In one such case, he exhibited a WS-119L payload, perhaps with some of our trainees' initials on it.

Late in 1952, I spent a month at Edwards AFB, California, to forecast three-day trajectories for Moby Dick flights, as specified in my travel orders. Forty years later, I discovered from Peebles's *The Moby Dick Project* (Peebles 1991) that I actually had been working on a top-secret program called Flying Cloud, WS-124A!

Skyhooks were to be evaluated as a balloon bomber in the event of an actual war. Proposed payloads included nuclear warheads, but the program was abandoned as intercontinental ballistic missiles became viable.

### UFO Mythology

There were a number of peripheral events associated with these programs. At Alamogordo AFB in 1952, we dispatched F-86 jet aircraft to see if they could intercept our Skyhooks at various altitudes. The exercise was designed to evaluate what

Soviet interceptors might experience when our reconnaissance balloons arrived. The event was described in Timothy Good's *Above Top Secret* (Good 1988), published thirty-six years later. It represents a classic example of how portrayals of classified military testing can become transformed over decades into something out of this world. Date and aircraft type were correct but the latter were described as trying to intercept an evasive UFO that featured hovering and accelerations up to 700 mph.

Alamogordo Air Force Base was renamed Holloman AFB in 1953. On October 27 of that year, we launched an unclassified payload. It failed to terminate at the scheduled twelve-hour flight duration, and, six days later, it was detected by the Royal Air Force over the Atlantic headed for London! This of course generated UFO hysteria (Good 1988). Newspapers announced it could not be a Skyhook since there was presently no such activity in Europe, but altitude and performance reports agreed with our vehicle's capabilities. Ironically, British intelligence officers also knew that but would not disclose the



object's identity. They too were involved with the WS-119L program, and test flights were to be launched from Scotland. Yet this incident is still highlighted in UFO literature as a classic case for their cause.

We flew a few classified programs in the late 1950s and 1960s which included special flares at night from twenty-mile altitudes. That was a predictable UFO generator.

Philip Corso's book *The Day after Roswell* (Corso 1997) contained many significant errors including movements of some of Wernher von Braun's German scientists, who shared our building at Holloman AFB. Sixty pages were dedicated to a once-secret U.S. Army project for a lunar base called Project Horizon. Plans were initiated in 1959 but were finally cancelled because Project Apollo had exhausted space funds. The story was suspiciously infused with hints of alien activity on the Moon. That was interesting because that same year my Skyhook Center was flying a classified Army project, code named . . . Project Horizon! It had nothing to do with lunar bases and involved photographic studies of the horizon. The purpose was to obtain calibration information for guided missiles.

In 1967 and 1969, we flew ever more advanced, classified reconnaissance cameras. These cameras were huge, weighing from 6,000 to 8,000 pounds, and encased in ten-foot cylinders. They were tracked by several helicopters carrying armed military police to surround the payload after landing. With Roswell often downwind, this very likely contributed to that UFO story line, and time compaction is a vital ingredient in creating such myths and legends.

Skyhook incidents near to or on the ground, like this previous case, provoked more UFO tales than balloons at an altitude. There was a cluster of this type of event in the 1960s (Peebles 1994), which evoked much media coverage. It persists today as a hallmark UFO case, and features the most detailed witness descriptions.

One of those events had serious overtones, involving sensitive military sites, with no obvious revelations to this date. It is noted in Good's book, *Above Top Secret* (Good 1988). "A metallic disc-shaped UFO with bright flashing lights moving slowly over the site. It stopped and hovered at 500 feet then the UFO climbed vertically and disappeared at high speed" (this was in March, 1967). The location was a Minuteman missile site at Minot, North Dakota. I became suspicious after reading this, aware of a top-secret Skyhook program in that era, with one launch site in the Dakotas. There were other descriptions that rather precisely identified the program, despite scattered inclusions of media mythology.

The program was Project Grab Bag, also called Sky Dipper or Cold Ash. Again, there was a cover-up unclassified program, Program Ash Can. Both programs involved sampling radioactive fallout debris in the stratosphere. After a brief Navy test sequence, Grab Bag, now under the USAF, became operational in 1956, extending briefly into the 1970s. Its highly classified signature was due to the fact that a final product involved establishing details of Soviet plutonium production. Even our Project Ash Can attracted more than the usual Skyhook attention, since parachute and payload were snatched

in midair by USAF cargo aircraft. That prompted stories of aircraft being attacked by a UFO while the mother ship (the Skyhook) hovered high above.

Grab Bag was a special UFO generator. After stratospheric sampling, lifting gas was partially released through a valve in the apex of the Skyhook. The entire ensemble was thus lowered to within a few thousand feet of the ground. Then it released a parachute with the payload while the under-loaded balloon rocketed upward to eventually shatter. Since most of these activities occurred at night, Grab Bag generated probably the most detailed UFO events in the literature. For instance, "A conical shaped object descended from the sky. It hovered at an estimated 3,000 feet. A smaller UFO landed within fifty feet" (Brookesmith 1995).



This photograph shows Skyhook Ballon 93 leaving the deck of the USS Norton Sound (AV-11) on March 31, 1949. U.S. Navy Photo.

That is a precise description of the basic Grab Bag profile. The Minuteman case with a UFO climbing vertically to disappear at high speed sounds very much like the under-loaded balloon zooming skyward to disappear as it self-destructed.

Project tracking included three helicopters. If the winds were light, the entire ensemble would be valved to the surface. Again, UFO reports clearly identified the process. "Floating red lights which moved over a highway and into a field at night. It appeared like a two-story building, with other lights grouped around it. The latter sometimes hover around the central object" (Fawcett and Greenwood 1984).

The payload did indeed have red lights. The other hovering lights were the helicopters. Just before landing the sample would be transferred to another container via a powerful centrifugal blower. That noise amplified the mystery. Occasionally the tracking crew would transfer the sample into metal cylinders, engendering even more strange noises in the dark. Other activity was also reported: "Radiation fields and other forms of energy have appeared to be directly connected with a hovering or landed UFO" (Brookesmith 1995). The radioactivity, although slight, was from the sample being transferred by recovery personnel to another container.

Readers may wonder why, after recovery, Grab Bag personnel would not have notified local authorities without disclosing classification. The answer is that proceedings were so classified that they could not identify their mission under any circumstance. The program was a natural for engendering mystery and a treasury of lucrative narratives for UFO folklore.

Meanwhile, at our Holloman AFB Skyhook Center, we continued to launch a variety of classified reconnaissance cameras, now with loads up to five tons. Again, there were

## Project Grab Bag generated the most detailed descriptions of UFOs in the literature.

tracking helicopters with armed military police (MPs). People in southern New Mexico were used to seeing military helicopters on various missions. However, we flew a number of reconnaissance camera missions in 1975 in northeastern New Mexico where military helicopters were seldom seen. This created some suspicion. "Unidentified helicopters" had also helped to amplify Grab Bag as a UFO generator, triggering later myths involving military helicopters.

There was an outbreak of mutilated cattle stories in Colorado and northeastern New Mexico in 1975. Strange helicopters were part of the scenario. The *Albuquerque Journal* reported "ghost copters" buzzing ranches (Peebles 1994). The presence of armed MPs onboard added to the frenzy. The FAA Area Coordinator announced an investigation of this outbreak but never revealed what it had found. The FBI also became involved with similar results. Both agencies had quickly discovered it was our highly classified program. Their "case closed" reaction is still highlighted today in government cover-up tales.

Clearly, secret Skyhook balloon programs magnified government cover-ups and engendered numerous UFO stories, sightings, and myths. Classified aircraft also contributed to UFO folklore during the Cold War. The U-2 reconnaissance aircraft followed WS-119L operations over the USSR. It triggered similar UFO reports, even while training in the U.S. However, unlike supersonic aircraft, Skyhooks remained within sight for long durations, landing with strange payloads, far from their origin.

It is important that all this activity be revealed. Project Grab Bag generated the most detailed descriptions of UFOs in the literature. Even relatively skeptical individuals might have wondered about those sightings, believing them to be too complex to dismiss. I hope these revelations provide a vital insight into what was "behind the looking glass" of secret Cold War activities.

The Pentagon published the first two detailed reports in 1995 (Weaver and McAndrew 1995), demonstrating how top-secret Project Mogul became the initial trigger for the Roswell mystery. Readers may wonder why that effort has not been repeated for once-classified events detailed in this article. Actually, it was only at the urging of a congressman, the late Steve Schiff of New Mexico, that the Pentagon began work on the Roswell affair. Having participated in the preparation of the final report (McAndrew 1997), I can reveal there was substantial resistance to the whole process. A number of times we thought the enterprise would be cancelled. It was only via last-minute intervention by the Secretary of the Air Force that the report was finally published. Many Pentagon authorities believed that the Roswell and UFO investigations in general were not worthy of distraction from more pressing matters of national importance.

Despite providing accurate hardware descriptions of the programs we have covered, some reports included stories of onboard aliens and other typical elements of UFO mythology such as stalled cars and skin burns. They were imitating numerous UFO witnesses with a tendency to repeat stories that preceded their own sightings.

We can deplore or marvel at the persistent thirst for otherworldly fantasies, but a sage in Elizabethan England had an apt comment that can categorize even contemporary mythology:

So full of shapes is fancy, that it alone is high fantastical.

—Shakespeare, *Twelfth Night*, Act I, Scene 1

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# The Strange Odyssey of Brenda Dunne

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*Criticism of parapsychological methodology has caused researchers to adopt  
more scientifically valid means of conducting their studies.*

*There are those in the field, however, who still reject scientific protocol.*

DOUGLAS M. STOKES

**I**t takes a lot of hubris to become a parapsychologist. One has to have the temerity to come to the conclusion that one's own judgment—and that of a small cadre of renegade scientists—is superior to the collective judgment of the entire scientific establishment when it comes to the reality of phenomena such as ESP and psychokinesis. While such self-confidence is virtually a prerequisite to doing scientific work in parapsychology, too much hubris may be a bad thing. There are some psi researchers who believe that they can ignore the hard-earned lessons about what constitutes proper scientific methodology—knowledge gained over more than a century of intense and often acrimonious debate with skeptics. They instead rely on their own “creative judgment”—



Gerald Fried

even if that means violating the basic canons regarding acceptable procedures in psi research. One such researcher is Brenda J. Dunne.

Dunne is best known for her work on *remote perception*, a term she uses to describe the remote viewing paradigm made popular by physicists Russell Targ and Hal Putoff in the early 1970s (see Targ and Puthoff 1977, for instance). In these experiments, an “agent” travels to a remote location and a “percipient” in the laboratory attempts to describe the location visited by the agent. Dunne began her work on remote perception at Mundelein College in Chicago and the University of Chicago in collaboration with John Bisaha. She then moved to Robert Jahn’s Princeton Engineering Anomalies Research (PEAR) center in Princeton, New Jersey, where she continued her research program.

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*Douglas M. Stokes is a well-known internal critic of research methodology in parapsychology. He was one of the contributors to The Skeptic’s Handbook of Parapsychology, and a summary of his work may be found in his book The Nature of Mind, published by McFarland in 1997. He is presently a management consultant specializing in statistical analysis with the firm of Sullivan, Cotter, and Associates, Inc. in Detroit.*

The summer 2003 issue of the *Journal of Scientific Exploration (JSE)* began with an article by Dunne and Jahn summarizing the results obtained by Dunne to date (Dunne and Jahn 2003). The journal is the flagship publication of the Society for Scientific Exploration and was created in some sense as an attempt at counterprogramming to the SKEPTICAL INQUIRER. It publishes articles by scientists whose work has been rejected or ignored by mainstream or “establishment” science. In the past year alone, the *JSE* has featured articles on *qi* energy, face-like features on Mars, the Loch Ness monster, electronic voice phenomena, anomalies in relativity theory, transoceanic contacts in prehistoric America, rock that crackle, spark, and glow before earthquakes, biological cold fusion, and the confessions of a grave-robbing UFOlogist. Unfortunately, the *JSE* has all too often served as a haven and publication outlet for parapsychologists who feel that their work has been unfairly rejected by “mainstream” parapsychology (which itself is of course rejected, if not held in outright contempt or disdain, by the actual scientific establishment). However, despite its flaws, mainstream parapsychology has learned and largely incorporated hard lessons about proper methodology in the course of its century-long debate with its critics in the mainstream scientific community. More often than not, the reason

aspiring parapsychologists' work is rejected for publication by, or criticized in, the mainstream parapsychological journals is that it fails to adhere to the basic minimal methodological standards accepted by all competent workers in the field.

### Dunne's Failure to Randomize

The most basic and perhaps most elementary of these standards is that targets in ESP experiments should be randomly selected. Dunne's research has failed to live up to this standard even once in the course of her nearly three-decade-long and widely publicized research program.

At the very outset of parapsychology, it was recognized that nonrandom selection of targets may result in spurious evidence for ESP. For instance, if I tell you that I am thinking of an integer between one and ten (inclusive), you may be more likely to guess certain numbers (e.g., seven) rather than others (e.g., nine). If your bias in guessing and mine in selecting the number to be the target are similar (which they are likely to be by human nature), then there will be a greater than 10 percent chance that your guess will be correct.

Similarly, in Russell Targ and Hal Puthoff's famous picture-drawing experiments with Uri Geller at Stanford Research Institute, the method of selecting the target was to open a dictionary "at random" and draw the first "drawable" word on the page. Targ and Puthoff regarded this as a satisfactory approach to randomization. However, in the one example they give of this process, the first drawable word on the page chosen was *farmer*. (The decision as to which words are "drawable" is of course itself subjective in nature.) In the target drawing created based on this word, the "farmer" is given not only a pitchfork, but horns and an elaborate tail. To top this off, the word *devil* was written above the farmer. In attempting to guess this target, Geller, ensconced inside SRI's famous shielded room, drew several religiously oriented pictures of Earth together with tablets, an apple, and tridents or menorahs. If Geller and the person constructing the target had just been, say, viewing a collection of paintings by Hieronymous Bosch or watching a clip from *The Exorcist*, this may have prompted them both to construct drawings with religious themes, producing a spurious match. As I pointed out in my review of Targ and Puthoff's book when it was first published (Stokes 1977), if the dictionary word can be interpreted this loosely, then the target selection process cannot be said to be random at all.

In Dunne's initial research, the target location for each trial was ostensibly randomly selected. (Recall that Dunne's remote perception research involves an agent traveling to a remote location, while a percipient attempts to divine the nature of the location through ESP.) However, in Dunne's research protocol, the agent took pictures of the target location and these pictures were provided to the judges who rated the degree of correspondence between the percipient's impressions of the target loca-

tion and various foil locations. Under this procedure, the target is not randomly selected but rather is nonrandomly constructed by the agent through his or her choice of which aspects of the target location to photograph, etc. Thus, had the percipient and the agent, who were often friends, had similar thought processes that day or similar recent experiences, this may have caused the percipient to articulate themes in his or her description of the target location that were similar to themes in the agent's photographs of the target location. For instance, if they were both depressed, the percipient may describe a dark location, and the agent at the remote woodland location may focus her picture-taking on shadowed areas beneath the trees rather than on the bright sunlit valley in the opposite direction. Another problem with this procedure is that the trials were conducted over a period of several months, so that seasonal changes and weather patterns could creep into both the percipients' impressions and the agent's pictures.<sup>1</sup> I pointed out these problems in two early reviews of Dunne and Bisaha's work in

### At the very outset of parapsychology, it was recognized that nonrandom selection of targets may result in spurious evidence for ESP.

the *Journal of Parapsychology* (Stokes 1978a, 1978b). Another problem in this early research is that Dunne and Bisaha tested subjects using sampling without replacement combined with trial-by-trial feedback to the subject. When a limited series of target locations is involved, the subject may increase his probability of a match with the target location by studiously avoiding giving descriptions of targets already seen, thus ensuring that the judges will not match his impression with the previously seen targets, increasing the probability that they will match his impression with the current target. Even worse, the subject can provide explicit cues to the judges as to which matches *not* to make (e.g., "I feel that the target involves water but is nothing like the marina we saw yesterday"). These problems were pointed out early on, both by me (e.g., Stokes 1981) and by Jim Kennedy (e.g., Kennedy 1978).

As mentioned above, the target locations were ostensibly chosen randomly in Dunne and Bisaha's early research. However, in a scathing review of Dunne's research program, Hansen, Utts, and Markwick (1992) note that the randomization process is inadequately documented in most of Dunne's research. These authors also take Dunne to task for multiple statistical errors as well as the fact that the percipient was not closely monitored in order to limit the possibility of fraud. The PEAR team's response to this critique (Dobyns, Dunne, Jahn,

and Nelson 1992) was less than adequate and rather unconvincing, especially regarding the sort of procedural errors discussed above. In their most recent publication, Dunne and Jahn (2003) dismiss the critique as "irrelevant" and "incorrect," demonstrating that they have learned little from such constructive criticism.

### Current Research

In her latest research, Dunne has apparently abandoned the idea that it is necessary to select targets randomly at all. Instead, she has adopted what she calls the "volitional protocol," in which the agent freely chooses the target location. Of

**Dunne and Jahn claim that there is no problem with their relaxed methodology, as the trials using better procedures yielded results that were just as strong as those using more a more relaxed methodological standard. However, even the best of their procedures is so woefully inadequate as to render their results useless.**

the 336 "formal trials" reported in her latest overview of her research program (Dunne and Jahn 2003), 211 utilized the volitional protocol and are thus absolutely worthless as evidence of ESP and only 125 involved the (ostensibly) random selection of the target.

Dunne's latest procedure is to have the agent and percipient check off a list of "descriptors" regarding the target location (e.g., whether the scene is "confined or expansive," whether it is "noisy or quiet," whether it involves the presence of water, is indoors or outdoors, etc.). The degree of match between the descriptors checked (or rated) by the percipient and agent is then compared to the statistical distribution of matches between the percipient's descriptor list and those provided for other locations on other trials. However, the same problems exist as for the pictures taken by the agent in Dunne's early research. The location is not the target; rather the target is the agent's description of the location. Common thought processes and common experiences can thus lead the agent and the percipient to provide similar descriptions. For instance, if they are in glum mood, they may both rate the location as "confined and quiet" rather than as "expansive and noisy." The agent may even consciously or unconsciously bias his ratings to correspond with those he believes the percipient is likely to give. In an appendix to their paper, Dunne and Jahn attempt to deal with the issue of common rating biases between the agent and percipient by making comparisons only within agent-percipient pairs. This, however, does not address the issue of biases that may fluctuate from trial to trial. Also the problem of the percipient's avoidance of descriptions of previously seen target locations remains.

There is a very clean procedure available to the PEAR team that would avoid all of these problems: create a pool of targets for each trial prior to the trial, and have the target descriptions prepared before the trials. Then choose a target location randomly from the pool, and compare the correspondence of the percipient's description with the chosen target location against those of the alternative locations that were not selected. This procedure was pointed out to the PEAR team over a decade ago by Hansen, Utts, and Markwick (1992) in their extensive critique of Dunne's program.

Dunne and Jahn claim that there is no problem with their relaxed methodology, as the trials using better procedures (e.g., ostensibly random selection of targets) yielded results that were just as strong as those using more a more relaxed methodological standard (e.g., the volitional trials). However, even the best of their procedures is so woefully inadequate as to render their results useless. And why embark on a research program using a flawed procedure that will prove nothing even if striking results are obtained? Jahn and Dunne claim that the odds against their overall results being due to chance coincidence are more than ten million to one. But chance is not the likely explanation, methodological inadequacy is. Thus, Dunne and Jahn have amassed impres-

sive evidence for some type of anomalous phenomenon. Unfortunately that anomalous phenomenon is not ESP or "remote perception" as they call it, but rather the unending folly of a research team that should know better by now (if only they would listen to their "unfair" critics in the "mainstream" parapsychological journals).

### Note

1. For example, the percipient may describe dripping red leaves on a rainy autumn day and glistening snow on a bright winter day; these elements will likely be captured in the agent's photographs as well, enabling the judges to match the target locations to the percipients' impressions without any ESP on the part of the percipient being involved at all.

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# Bridging the Chasm between Two Cultures

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*A former leader in the New Age culture—author of nine titles on auras, chakras, “energy,” and so on—chronicles her difficult and painful transition to skepticism. She thanks the skeptical community and agonizes over how the messages of scientific and critical thinking could be made more effective in communicating with her former New Age colleagues.*

KARLA McLAREN

I've been studying the conflict between the skeptical community and the metaphysical/new age community for a few decades now, and I think I've finally discovered the central issue that makes communication so difficult. It is not merely, as many surmise, a conflict between fact-based viewpoints and faith-based viewpoints. Nor is it simply a conflict between rationality and credulity. No, it's a full-on clash of cultures that makes real communication improbable at best.

I know this firsthand, because as a former member of the New Age culture, I struggled for years to decipher the language, the rules, the attitudes, and the expectations of the skeptical culture. Yet for a great while, all I could hear from the skeptical culture was noise—and confusing noise at that.

I'm not really sure how to introduce myself, except perhaps with this paraphrase: "I have seen the enemy, and she is me." I'm an author and healer (or I was, actually) in the metaphysical culture. I wrote about energy and chakras, auras, healing, the different kinds of psychic skills . . . the whole shebang. I've traveled throughout the states doing book tours, seminars, and workshops. I've appeared at all the top New Age venues, such as the Omega Institute, Naropa University, and the Whole Life Expo (which I call the Hell Life Expo, but that's another story). My books have been translated into five languages, and I've even had a title in the One Spirit Book Club. Understanding the metaphysical/New Age community and culture has been a central focus of my life and my career.

I'm not just a member of the New Age community—I've also been a purveyor of the very things the skeptical community is so concerned about. I've been involved in metaphysics and the New Age for over thirty years, I've written four books and recorded five audio learning sets in the genre, and I was considered one of the leaders in the field.

I'm not in the field any longer, but it's hard to truly disappear when so many of my books and tapes are already out there. It's also hard to disappear when I don't really know what to say to the people in my culture. The cultural rift is so extreme that anything I say will prove that I have gone to the other side, the wrong side—the side of the enemy. In actual fact, however, I have just seen enough to know that the skeptics and the critical thinkers have some extremely pertinent and meaningful things to say. I've now studied enough skeptical and scientific information about paranormal abilities and events to question many of the precepts upon which my work was based. More important, I've seen enough to understand firsthand the real costs of the New Age.

I've also learned to understand the differences and similarities in the New Age and skeptical cultures, so that I no longer react in a stereotypically offended fashion when I or the people I know and love are referred to as frauds, shams, or dupes. I understand now that these terms are not meant disparagingly, for the most part. I understand now that these terms often mask a great deal of care and concern for people in the New Age culture. It's sometimes hard to unearth that concern—it often requires an almost anthropological capacity to understand the cultural differences between us—but the concern is there.

Until I understood that concern, I couldn't find myself in the skeptical lexicon. I couldn't identify myself with the uncarving hucksters, the wildly miseducated snake-oil peddlers, the self-righteous psychics, the big-haired evangelists, or the megalomaniacal eastern fakirs. I couldn't identify my work or myself with the scam-based work or the unstable personalities so

roundly trashed by the skeptical culture, because I was never in the field to scam anyone—and neither were any of my friends or colleagues. I worked in the field because I have a deep and abiding concern for people, and an honest wish to be helpful in my own culture. Access to clearheaded and carefully presented skeptical material would have helped me (and others like me) at every step of the way—but I couldn't access any of that information because I simply couldn't identify with it. Until now.

I'm writing this piece as a thank you letter to the skeptical community. I want to thank you for helping me to fully understand just how much bad training I've been exposed to in my metaphysical/New Age culture (actually, it's not *my* culture any longer, but for simplicity's sake, let me continue to claim it for the duration of this piece). But I'm also writing as an attempt to open a dialogue, and perhaps to begin bridging the precipitous chasm that exists between our two warring cultures, because at this point, the lion's share of people from my culture can't really hear much (if anything) from the skeptical culture. And that's a real shame.

This cultural divide is making it nearly impossible for me to be honest in my own culture about the changes I've made. Right now, my Web site says that I'm on sabbatical. I've cancelled all workshops, turned down numerous book contracts, and I'm slowly deconstructing my career. I've cleared out files, e-mails, and letters, thousands of letters, from people who considered me an expert. I'm turning down all requests for interviews and consultations, and I'm going back to school to get my degree in sociology and behavioral sciences. If I write another book about the New Age culture, I want to write it as a sociologist—not as a mystic *or* as a naysayer, because neither of those positions has been truly helpful to people in my culture.

The fight between our cultures has often been an ugly and confusing one, and in all honesty, that fight can't be won the way we're fighting it. I'm tired of seeing so many people get hurt when so little good comes of that hurt. So I'm going to try something new, and I'm going to try to find a way to expiate the damage I feel I've done. But first I need to find the words to tell people in my culture what I'm doing and why.

On one level, my story is not a typical one, because I'm not simply a New Age follower who finally woke up. However, even though it is unusual and perhaps even unheard of for someone in my position to make a complete turnaround, I think the process I followed is fairly typical. I started out in my youth, knowing (through direct experience) that the things I learned in the New Age and metaphysics were true, and that naysayers were just that. After a time, though, I began to question the things I saw that didn't fit—the anomalies, the cures that didn't work, the ideas that fell apart when you really looked at them, and so forth. I wrote passionately about the trouble I saw in my culture, and I even became a voice of reason. Sadly, though, every time I tried to research the things that disturbed or troubled me, I hit a wall.

That wall, built of deep cultural differences and decades (or centuries) of distrust, meant that I could find nothing within my culture that could help me think critically. Critical thinking and skepticism live in another world from mine—they live

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across a chasm where no bridge and no safe passages exist. It wasn't until I became a citizen of the Web that I was able to undertake the harrowing journey across that chasm and land, finally, on solid ground.

How did a card-carrying, aura-wearing, chakra-toting leader of the New Age become able to understand and eventually embrace the skeptical culture? Well, it took quite a while, so let me start at the beginning.

I first encountered the New Age in 1971, when I was ten years old. My mother had been experiencing numerous arthritic symptoms that just weren't responding to medical care, and she was headed for a wheelchair. Somehow, she found a yoga class, and slowly, she became well again. She also became a vegetarian (which was very avant garde at the time) and we began frequenting health food stores in search of unusual things like whole grain cookies, cod-liver oil, and bean sprouts. Our lives changed very swiftly, especially after Mom became a yoga teacher herself and entered more fully into the metaphysical/New Age culture. Yoga has been jokingly called the "gateway drug" to the New Age. That was certainly true for us.

Our family fell apart over this massive change (though my parents' marriage was rocky anyway), as my father was and still is a skeptic with a strong intellect and good native training in scientific and critical thought processes. One of my brothers, who is now a mathematics professor, joined with my father, while the rest of us kids (four total) went along in our own ways with my mother's interest in metaphysics, spirituality, and the New Age.

We switched from conventional medicine to homeopathic care, learned to meditate, and joined groups that listened to supposedly "channeled" beings—we became a part of the "in" crowd. I grew up in the San Francisco Bay area, and went to high school in Marin County (the epicenter of the New Age explosion of the seventies and eighties), so I was surrounded at all times by unusual people and experiences. It was a fun and often exciting time, and though I much preferred the magical world my mother showed us to the mundane world my father defended, I was always a very bright and skeptical person. Even in my early teens, I was able to see right through questionable things like est, Scientology, breatharianism, urine drinking, and the really dangerous cults—yet that same skepticism and intelligence actually helped me validate other unusual experiences (of which I had many). I knew many psychics and alternative healers who seemed to be very good at

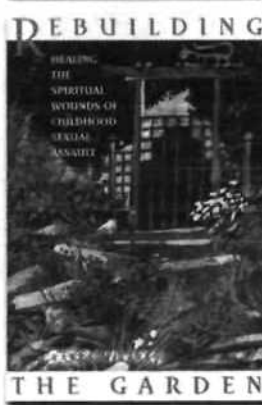
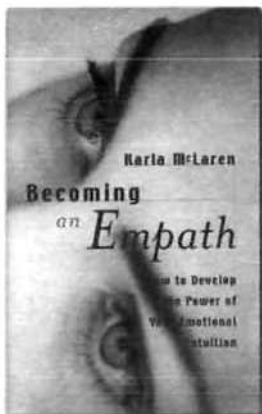
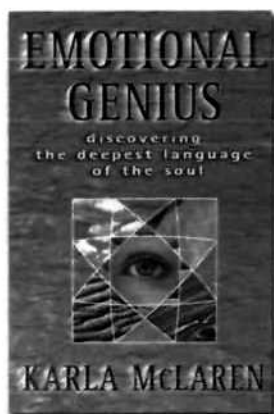
what they did, and I directly experienced healings and psychic readings that I couldn't logically refute.

In that period, it would have been wonderful to come upon skeptical and critical thinking techniques, but alas, critical thinking wasn't taught in my high school. I didn't even know the category existed! When I went to junior college, I took geometry and logic for my critical thinking courses and thus I missed out on the subject once again. In my education, I didn't gain the skills I needed to help me understand what was occurring when New Age and metaphysical ideas and techniques seemed to work. My empirical experience "proved" the validity of things like psychic skills, auras, chakras, contact with the dead, astrology, and the like—and I had very little in my intellectual arsenal at that time to help me understand what was truly occurring.

For instance, an understanding of cold reading would have helped me a great deal. I never knew what cold reading was, and until I saw professional magician and debunker Mark Edward use cold reading on an ABC News special last year, I didn't understand that I had long used a form of cold reading in my own work! I was never taught cold reading and I never intended to defraud anyone—I simply picked up the technique through cultural osmosis.

To be fair, a skeptical movement did arise during my early teens, but it unfortunately created a deep cultural rift that continues to this day. In the seventies, Uri Geller became popular. My first real contact with someone in the skeptical culture was watching James Randi on television, just tearing Geller to bits. I didn't understand what was happening. Uri Geller appeared on the Mike Douglas show and on the Merv Griffin show, and you could clearly see him perform his paranormal feats right there on television. Surely Mike and Merv wouldn't be involved in lying to the public? I really didn't understand what Randi's problem was with Geller, and my friends and I thought Randi was very vitriolic. I didn't learn about critical thinking from Randi—what I learned was that some people just had it in for healers and people with paranormal gifts. I know he would not like to hear this, but it's still true: James Randi's behavior and demeanor were so culturally insensitive that he actually created a gigantic backlash against skepticism, and a gigantic surge toward the New Age that still rages unabated.

I certainly understand and support James Randi's anger, frustration, and even vitriol now (especially after having lived



through the New Age for so many decades), but all I could see then was a very sarcastic man who seemed to attack Geller personally. Now, after having been a regular visitor to Randi's Web site ([www.randi.org](http://www.randi.org)), I can see him as a deeply caring man who works tirelessly for an important cause. I also see that he is very concerned about some of the unbalanced New Agers who write to him in barely legible missives. I empathize with Randi, because people like that write to me, too (though I take on the role of hero in their fevered fantasy lives, while Randi is treated as a villain). Now that I can see him as an individual and understand his culture, I can see James Randi as the excellent (and intense) man he is—but it took me a while. Had Randi understood the New Age culture back when Uri Geller was becoming popular, he could have easily spoken in a way that might have been heard—or at least in a way that wouldn't have caused such a violent backlash. Or perhaps I'm being too idealistic.

**I certainly didn't understand the skeptical culture until I spent real time considering it as a culture—and I know from my reading that most people in the skeptical culture don't understand the New Age culture at all. As a result, the yelling between our cultures just becomes louder while the real communication falls into the chasm that divides us.**

You see, I've been speaking to people in this New Age culture in their own language, and though I certainly was heard, I don't think that, in the end, I really did any good. Growing up as I did in nutty, kooky Marin County, I was able to see some of the most egregious examples of New Age chicanery—and as I matured into a writer and healer, I always warned against them. The problem is this: In my culture, you can't openly attack anyone or their character, and you can't use truly focused skepticism. In my culture, personal attacks are considered an example of emotional imbalance (where your emotions control you), while deep skepticism is considered a form of mental imbalance (where your intellect controls you). Both behaviors are serious cultural no-nos, because both the emotions and the intellect are considered troublesome areas of the psyche that do very little but keep one away from the (supposedly) true and meaningful realm of spirit. When I wrote my books and recorded my audio programs, I had to write and speak so carefully that it took most people two or three read-

ings to figure out that I was directly challenging many of the foundations upon which the New Age is built. Actually, my culturally sensitive capacity to attack without attacking and criticize without criticizing was so effective that some avid readers still don't know what I was saying.

From a vantage point outside the New Age culture, my culture's disavowal of emotions and the intellect may seem very strange and nearly inexplicable. Nevertheless, it is a very real cultural component that must be understood and considered if any useful communication is going to occur. If we want to successfully communicate with someone, we've got to understand not just their language, but the cultural context from which their language springs. From what I've seen in both the New Age and the skeptical cultures, this understanding is absent. I certainly didn't understand the skeptical culture until I spent real time considering it *as* a culture—and I know from my reading that most people in the skeptical culture don't understand the New Age culture at all. As a result, the yelling between our cultures just becomes louder while the real communication falls into the chasm that divides us. In all the din, people in my culture hear what they deem to be hyper-intellectual and emotionally charged attacks upon their cherished beliefs, while people in your culture hear what they deem to be wishful thinking, scientific illiteracy, and emotionally charged salvos in defense of mere delusions.

This is of course a tragedy, but after reading through the skeptical literature for the last three years, I feel that this tragedy may be avoidable. I understand your culture now, and I understand the concern, care, and interest you have for the people in my culture. I'm now able to read past text I once considered inflammatory and see the dedication behind it—not just your dedication to competent research and information-gathering, but your dedication to clear communication. I see your faith in human intelligence, your anger about swindlers and charlatans, your open-minded ability to question authority and accepted wisdom, and your willingness to fight to further a cause close to your heart. My favorite people in the New Age culture share these same qualities. I feel that people in your culture are capable of reaching out to my culture in sensitive ways that will have a chance of being heard—because it's vital that you are heard.

It's vital that a way be found to help people in my culture question, think about, and critically interpret the barrage of information and misinformation they receive on a daily basis. However, it's also vital that the information be culturally sensitive. For instance, the first time I visited the skeptical health care Web site called Quackwatch, it felt as if I were walking into enemy territory. "Quack" is a very loaded word—it's a fighting word! Though site owner Dr. Stephen Barrett has every right to call his excellent Web site anything he likes, I

wonder why it couldn't have been called, for instance, HealthWatch, HealingInfo, DocFacts, or something equally nonthreatening. Why do I have to type the word "quack" when I want a skeptical review of the choices I make in medical care? And why do I have to spend so much time translating on the skeptical sites I visit—or just skipping over words like scam, sham, quack, fraud, dupe, and fool? Why do I (the sort of person who actually *needs* skeptical information) have to see myself described in offensive terms and bow my head in shame before I can truly access the information available in your culture?

I have a selfish reason for asking these questions, because one of my first ideas was to make my own Web site a culturally sensitive portal to the skeptical sites—yet I cannot find a way to do so. I've got a Web page mock-up brewing in my files—a page that I've rewritten maybe fifty times or more—that tries to introduce the concept of skepticism in an open and nonthreatening way. I'd like to include links to the brilliant urban legends site (snopes.com), to Bob Carroll's online Skeptic's Dictionary (skepdic.com), to CSICOP and the SKEPTICAL INQUIRER (csicop.org), and to *The Skeptic* (skeptical.com). I also really wanted to include Quackwatch (quackwatch.org) and James Randi's site (randi.org)—but I just can't find the words. Sure, I can use my site to prepare people for the journey, but I know from experience that they would be in for quite a shock once they clicked on the links. I mean, it's one thing to find out that much of my culture and belief system was based on gossamer and hearsay, but it's another thing altogether to see people like myself being denigrated and pitied.

I found your culture and persevered through the (perhaps unintentionally?) insulting text and the demeaning attitudes because I had a serious need. I had a need to understand the avalanche of New Age ideas, gadgets, meditation techniques, and personalities I encountered as my career gathered momentum. I saw so much as I traveled and spoke to people in my culture, and so much of it worried me that I began to use the Internet to organize this avalanche and acquaint myself fully with information in my field. It was a harrowing journey, to say the very least. I waded into your culture for much-needed information, and ended up losing my own culture in the process. During the most difficult throes, I joked that I would have had to cheer up to be merely despairing—and that I would have had to calm down to be merely enraged. I'm still working through this.

What I see in the tragic clash between the New Age and skeptical cultures is that, for the most part, the skeptics have not yet been able to speak in a way that can be heard. Certainly, neither have people in my culture been able to perform that same feat. I see some scientific types working in the New Age culture, trying to prove that *chi* exists or prayer

works (or whatever it is they're doing this week). There's an awful lot of scientific jargon all over the New Age now, and while it's sad to see science being bent and mangled by my culture, I have to say that it shows we're listening to you. It shows that we're trying to get it right—to say things in a way you can hear. I know that my culture's sloppy and disrespectful use of science is something that angers and confuses many people in the skeptical community, but can we look at it in a different light?

People in my culture have heard you and we're trying to answer—but we don't understand you. Our cultural training about the dangers of the intellect makes it nearly impossible for us to utilize science properly—or to identify your intellectual rigor as anything but an unhealthy overuse of the mind. I know that sounds silly, but think of the way you view our

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capacity to dive deeply into matters of spiritual or religious study. You don't often treat our rigor as scholarship, per se (though it takes quite an intellect to understand and organize the often screamingly inconsistent sacred canon)—instead you tend to treat our work as an overabundance of credulity or perhaps even a stubborn refusal to listen to sense.

It is possible that our two warring cultures will never build a bridge across the deep rift that divides us. I know that in my own case, the transition from my culture to yours was long, arduous, and deeply painful. It was not an easy trapeze across a well-constructed bridge. In essence, I had to throw myself off a cliff. I had to leave behind my career, my income, my culture, my family, my friends, my health care practitioners, most of my business contacts, my past, and my future. I say this not to garner sympathy but to show what the leap truly entails. The New Age is a complete culture with its own rules, ideals, infrastructure, and social life. When I finally realized that my cultural training had me teetering on a foundation of candyfloss and dreams—and worse, that my work had encouraged others to teeter alongside me, I was inconsolable, yet I had absolutely no one to turn to.

I've made it, I think, through my rage and horror at my own complicity in helping people remain susceptible—and perhaps through my grief and despair (though that's more cyclical) about my own miseducation. Now I'm considering what to do from here. I've discovered in just the few (less than ten) conversations I've had with faith-based people that skeptical information is absolutely threatening and unwanted. What I didn't understand until recently is that when you start questioning these beliefs, there's a domino effect that eventually smacks into your whole house of cards—and nothing remains standing. Opening the questioning process is a very dangerous thing, and people in my culture seem to understand that on a subconscious level. In response to their extreme discomfort, I've become completely silent around believers—which is hard, because they make up most of my friends, family, and correspondents.

If I were in this business for the money, I would have never seriously questioned what I was doing. I would have turned back as soon as my research challenged or threatened me. But I wasn't in it for the money. I was there to help people, often very disturbed people who were trammeling after this cure, that device, these gurus, or those miracle supplements. I tried to help people in my culture make sense of all the ideas and gadgets that were coming at them with such rapidity, but I was unable to make even a dent. When I understood fully that, no matter how good my intentions, the mere mention of things like auras, chakras, and "energy" brought with them a host of truly unsafe and untested assumptions—and that I was leading people into an arena where skepticism and critical thinking were forbidden—I knew that it was time to stop, and stop completely. It was a wrenching, isolating, and despair-filled decision, but since my focus is to help others, it was the only ethical or moral shift for me to make.

I respectfully ask that you in the skeptical community consider making a similar (though hopefully not so jarring) shift in your behavior and approach to us. I understand now, after years of reading and research, that the skeptical culture exists because of a very real concern for the welfare and well being of others. Of the two cultures, I can honestly say I now vastly prefer the skeptical one. However, I know firsthand that the skeptical viewpoint cannot be heard or assimilated in the New Age and metaphysical community; it is anathema, and that's a shame for every single one of us. It is a shame because the search for the truth, the concern for the welfare of others, the need to be treated with respect, and the need to be welcomed in a culture—are all things my people share with yours. We have a different language and different references, but we share these basic human needs. I would ask you to respect our humanity, and approach us not as if you are reformers or redeemers. I would ask you to approach us as fellow humans who share your concern and interest in the welfare of others. I would ask you to be as culturally intelligent as you are scientifically intelligent, and to work to understand our culture as clearly as you understand the techniques, ideas, and modalities that have sprung from it. We are a people, not a problem.

I think I have found a way to speak across the chasm, to you. I am now learning to perform that same feat in reverse—

to talk to people in my culture about your culture, but that's a lot harder. I first need a rest, and I need to be in a real school, studying real science and getting a real degree (people in my culture tend to pursue offbeat degrees in offbeat subjects at offbeat schools). Watching people in the New Age has been as hard on me as it has been on you. Underneath all the magic, the wise ghosts, and the never-ending remedies lies a well of pain and loneliness that is immense and overwhelming. I always saw it—I always saw the excruciating truth of my culture, and I thought I could help. That I didn't help—not truly—is possibly the greatest devastation of my life. I need to heal from being a healer.

My voice was an important one in my culture; therefore, I've got to take responsibility for what I've done. I need to educate myself and come back into the fray in a healthy and respectful way. Maybe by the time I've organized my thoughts, a bridging culture will already exist. Maybe I'll find a way to be heard—or to translate the skeptical lexicon in such a way that people in my culture can access it without being insulted or shamed. One thing I'll be sure to stress is the fact that there is actually *more* beauty, wonder, brilliance, and mystery in science than there is in the mystical world.

One of the biggest falsehoods I've encountered is that skeptics can't tolerate mystery, while New Age people can. This is completely wrong, because it is actually the people in *my* culture who can't handle mystery—not even a tiny bit of it. Everything in my New Age culture comes complete with an answer, a reason, and a source. Every action, emotion, health symptom, dream, accident, birth, death, or idea here has a direct link to the influence of the stars, chi, past lives, ancestors, energy fields, interdimensional beings, enneagrams, devas, fairies, spirit guides, angels, aliens, karma, God, or the Goddess.

We love to say that we embrace mystery in the New Age culture, but that's a cultural conceit and it's utterly wrong. In actual fact, we have no tolerance whatsoever for mystery. Everything from the smallest individual action to the largest movements in the evolution of the planet has a specific metaphysical or mystical cause. In my opinion, this incapacity to tolerate mystery is a direct result of my culture's disavowal of the intellect. One of the most frightening things about attaining the capacity to think skeptically and critically is that so many things don't have clear answers. Critical thinkers and skeptics don't create answers just to manage their anxiety.

Maybe I'll find a way to capitalize on my culture's thirst for answers, and my people's capacity to work with conflicting information (metaphysical ideas change every six months or so and therefore people in my culture are very accustomed to switching mental gears). I have faith now that I didn't have before: faith in your culture's concern and integrity, and faith in my culture's curiosity and capacity to learn new things. I've also learned firsthand that bad training, though damaging, is not a life sentence.

I have a lot of work and research to do, but I do see a possibility now that I didn't see before. I want to thank you for your work and your efforts to protect people like me from harm. You make a difference. I hope one day to be able to do the same. □

# Fact, Fiction, and Strained Symbolism

JOSEPH P. SZIMHART

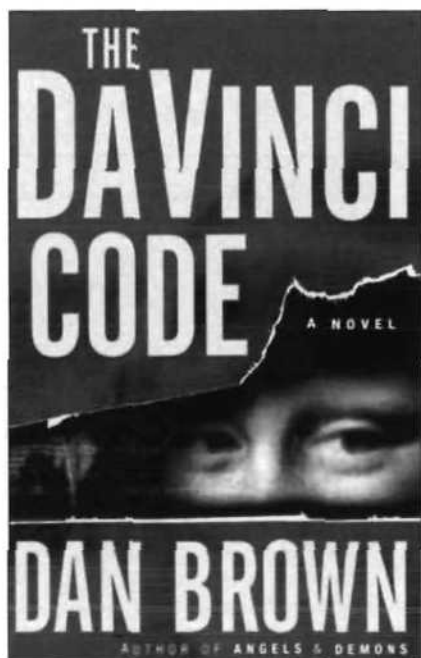
*The Da Vinci Code.* By Dan Brown. Doubleday, Random House, Inc., New York, 2003. ISBN 0-385-50420-9. 454 pp. Hardcover, \$24.95.

When I purchased *The Da Vinci Code* after the New Year arrived in 2004 I was aware that it was a best seller in 2003 (and still is) and that millions of people have read it. Until then I ignored the reviews and had little idea of the content. Some reviewers early on had said author Dan Brown's research was "impeccable." Brown's editor continues to stand by his man saying that Brown made nothing up save the fictional, contemporary story wrapped around sensational religious controversy. After I browsed through the story initially I realized what I was in for and why all the ensuing critical flack from art historians, religious scholars, and Catholic apologists. I was about to go on another the-Catholic-Church-has-it-all-wrong, New Age ride.

The story begins at night in the Louvre Museum in Paris where an albino monk dressed in a hooded cloak shoots a curator in the stomach. The monk, Silas, is a radical numerary member of the ultra-conservative Opus Dei sect of the Catholic Church. He wears a *cilice*, a thong that cuts flesh, around his thigh, and he flagellates himself bloody as part of a self-purification cult in accordance

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to Opus Dei guidelines. Silas works for someone he knows only as "the Teacher," a wealthy Briton who we later find out is obsessed with finding the Holy Grail of Arthurian legend. The curator happened



to be the leader of a secret sect (the *Priory of Sion*) that hides and protects the Grail and a cache of ancient manuscripts that could prove that Jesus Christ had fathered a child, Sarah, with Mary Magdalene. According to a fringe legend, Mary and her followers as the true Christians fled to France and perhaps England to avoid persecution from Peter and the Apostles. Their "secret" and the

Jesus bloodline was protected through the centuries via other sects like the Templars. In the novel a conservative Pope has died and a new, liberal leadership in the Vatican emerges, one that would rescind Opus Dei's significant status as a prelature. The Teacher, identified at the end as Leigh Teabing the ultra-wealthy Briton, finds a way to manipulate the Vatican and Opus Dei to get his hands on the Holy Grail.

Sir (he is a Knight) Teabing utilizes the latest in surveillance equipment and extensive research to pin down information about the Grail, which he believes should have been revealed. He does not want to be exposed as the one who forces the secret from the Priory, so he devises an elaborate scheme. He convinces the Opus leader, Bishop Aringarosa, that the Grail secret will indeed be revealed, thus creating a catastrophe for Roman Catholicism and wiping out Opus Dei's reason for being. Aringarosa has a secret meeting with Vatican officials who already know about the potential devastating Grail revelation, and they strike a deal. The Vatican pays the Opus leader 20 million euros in Vatican bonds to find the Grail and destroy the evidence. In return Opus would retain its standing and the Church could survive. He convinces the devoted Silas, an outcast all his life, to kill each of the four men who hold the secret after they reveal it. Teabing however plans to get the Grail for himself in the end.

Enter Robert Langdon, a well-known Harvard professor of religious studies who specializes in symbolism and arcane wisdom. The curator wanted to meet him in Paris, as Langdon had written a manuscript that inadvertently revealed the secret that the curator and only three others held. Before he died on the floor near the Mona Lisa, Sauniere, somehow managed to strip off his clothes, then arrange his body according to a famous Leonardo da Vinci drawing of a naked man in a cir-

liest Christians despite the fringe sects that derived new meanings and wrote contrary texts. Brown makes it appear that the Church really did destroy almost all evidence of the truth about Jesus. Brown's primary characters also explain to Sophie how the Churchmen executed over 5 million witches (pagans) and suppressed the sacred feminine principle purportedly valued by Leonardo and other initiates of a goddess-based or sun-worshipping pagan cult. Brown does claim at the beginning

in "Dismantling *The Da Vinci Code*" (*Crisis*, September 1, 2003). Miesel states, "So error laden is *The Da Vinci Code* that the educated reader actually applauds those rare occasions where Brown stumbles (despite himself) into the truth."

Brown's book presents Leonardo's most famous painting, the *Mona Lisa*, as far more esoteric than the fine, idealized portrait of the lady La Gioconda appears. Brown's hero, Langdon, finds androgynous symbolism derived from an interpretation of seeming inconsistencies in the landscape behind the figure, and he argues that *Mona Lisa* is "an anagram of the divine union of male and female." In effect, Brown creates a mockery of Leonardo's intent as an experimental artist. A pentagram (or star) that appears on the dead curator (drawn in his own blood) indicates to Langdon, the symbolist, that Sophie's grandfather knew a code Leonardo used to indicate the sacred feminine eschewed by the Roman Church. Leonardo allegedly inserted as a kind of subtext subliminal signals about the "goddess" and the female principle, about sun worship and pagan truths. In my view Leonardo's aesthetic use of geometry transcended any mere reference to goddess worship—his was a scientific as well as an aesthetic approach to beauty, not a devious one. Leonardo may not have been the ideal Catholic (Brown's book notes that he was homosexual), but he certainly was not the conning occultist described by Brown. According to biographers Antonina Vallentin and Vasari, at the end of his life Leonardo reconciled with the Catholic Church, took communion, and lamented that "he had offended against God and men by failing to practice his art as he should have done."

The novel pivots on the pentagram as a feminist marker, and our heroes are off on a whirlwind detective excursion while running for their lives. The French police initially target Langdon as the prime suspect. During their flight from Fache and the police Langdon and Sophie meet with Leigh Teabing,

**The book inspired a one-hour, ABC-TV news special and rounds of debates as well as reviews that range from praise to vitriol.**

cle, "the Vitruvian Man." Sauniere also managed to write some symbols in visible and invisible ink and in his blood on and around his body. Enter Sophie Nevue, a French criminal investigator and code cracker, along with Bezu Fache, the lead French crime investigator. Sophie happens to be the curator's estranged granddaughter. Due to the curator's codes and mysterious anagrams created at the crime scene, Sophie and Robert are drawn in (so to speak) to solve the murder, and later the Grail mystery.

So, if this is mere fiction, why all the fuss? The book inspired a one-hour, ABC-TV news special and rounds of debates as well as reviews that range from praise to vitriol. I think it is because Brown appears to take his thesis seriously: History would be very different had Constantine in 325 A.D. and the subsequent Roman Church not excluded certain sex rites, equality for females, and Gnostic texts from the Christian canon—and he appears to back the story with "facts." However, Brown's novel simplistically claims that under Constantine and the Council of Nicea at a single stroke Jesus was made divine. The reality is that the divinity of Christ was never in question among ear-

of the book that "All descriptions of artwork, architecture, documents, and secret rituals in this novel are accurate." *Derivative* would have been more accurate than *accurate*.

We do not have to search far to find some of Brown's sources, as he mentions them within the didactic or preachy segments in the plot. Among his primary sources are: *Holy Blood and Holy Grail* by M. Baigent, R. Leigh, and H. Lincoln; *The Templar Revelation: Secret Guardians of the True Identity of Christ* by Lynn Picknett and Clive Prince; and *The Woman with the Alabaster Jar: Mary Magdalene and the Holy Grail* by Margaret Starbird. Scholars have found insurmountable flaws in all these books, books that are highly speculative but with New Age appeal. A book not mentioned, *Daughter of God* by Lewis Perdue (2000), is close enough in plot and content that there has been legal accusation of plagiarism against Brown by Perdue. I read the Perdue book also, and I do find significant similarities. Perdue identifies over thirty "elements." However, if you want more thrills and shoot-em-ups, read *Daughter of God*.

Criticism from the Catholic front comes from Sandra Miesel, a medievalist

apparently an ally, at his sumptuous villa where he shows them a large reproduction of Leonardo's famous mural, *The Last Supper*. Wrongly, the novel wants us to believe that the mural represents the moment that Jesus instituted the Eucharist rite, but Leonardo illustrated John 13:21 when Jesus warns, "One of you will betray me."

Teabing, the Grail expert, points to the lack of a central chalice in the design as proof that the Grail is not a material cup. He goes on, with Langdon's acquiescence, to point to a "V" shape between an Apostle to Jesus' right and Jesus as a symbol of the female. He identifies that apostle as Mary Magdalene, not the Apostle John who art historians see. Indeed, Leonardo painted John as young and effeminate, but this was a convention that developed before and during the Renaissance. And one has to ask, if that is Mary, where is John? There are only thirteen figures. Teabing also claims that there is a disembodied hand with a knife (next to Judas) while St. Peter is posed with his left hand in a cutting gesture at the purported Mary's throat. He says Leonardo wanted to indicate that the Church had cut off Mary Magdalene as the chosen leader of Christ's church. A transfixed Sophie can only think, "This is the woman who single-handedly could crumble the Church?" Mary with her bloodline is the Holy Grail, the womb that held the seed of Jesus.

What I see is that Judas obscures Peter in Leonardo's composition, so that Peter's right hand appears awkwardly with the knife, but his left is merely resting as a caution on St. John's shoulder as John leans an ear toward Peter. The composition rests on two "W" shapes that contain four sets of Apostles with Jesus in a pivotal, central pose. If you want to find feminine V shapes you can find many, but you can find nary a Mary. Unfortunately, this may be the novel's weakest lecture, yet it contains the key to the Magdalene/Jesus union around which the entire quest revolves.

Brown interprets the evidence in *The Last Supper* much like an astrologer interprets a horoscope for a client. I

once studied astrology and could cast a horoscope in any of several systems. Astrology as a science is completely baseless and unreliable for character analysis to a fault, but astrologers, like good salesmen, can be very convincing, especially if you show interest in their product. Invariably, most folks who want a reading are easily impressed because the astrologer's product is the client's character and fate. We are all interested in ourselves and we will find many "hits" or accurate statements in almost any reading (unless you happen to be an informed skeptic). Sophie is very impressed with her experts, Langdon and Teabing, she is in unfamiliar territory, and she has an emotional need to support her dead grandfather. Naturally, she comes up with an affirmative response. Brown's novel wants us to believe that Leonardo played occult tricks like this on the Church through his many, many lucrative Church commissions, when he had only one that was not even completed.

The novel claims that Leonardo da Vinci was a Grand Master of the secretive Priory of Sion as were Victor Hugo and the twentieth century French artist Jean Cocteau. There is no evidence that they or Leonardo were members; the *Priory of Sion* is essentially a new religious movement that appeared after World War II. It announced its existence in 1962 after formally establishing itself in 1956. This new Priory has no connection to the Order or Abbey of Sion of the Middle Ages as the book claims as "fact" on the opening page. The Abbey group was dissolved by King Louis XIII of France by 1619 with the premises turned over to the Jesuits. The Order of Sion disappeared from history according to a *TimeWatch* BBC (1996) program, "The History of a Mystery." Brown states that the Bibliotheque Nationale of Paris "discovered parchments known as *Les Dossiers Secrets*, identifying numerous members of the Priory of Sion, including Sir Isaac Newton, Botticelli, Victor Hugo and Leonardo . . ." as one of his "facts." A fact Brown does not mention is that the new Priory sect

leader, the huckster Pierre Plantard, along with an accomplice deposited the *Dossiers Secrets* into the Bibliotheque. The parchments were fakes all along, as exposed on the same BBC program mentioned above.

As for Jean Cocteau (1889-1963), I have a translation of an interesting autobiographical book by him called *Opium: The Diary of a Cure*. Cocteau wrote the journal account liberally illustrated in his surrealistic style in 1929 while in treatment for "opium poisoning" at an asylum in France. Cocteau was a brilliant filmmaker and writer who apparently never gave up opium. *The Da Vinci Code* states on page 327 that Jean Cocteau was Grand Master of the Priory of Sion from 1918-1963. The Brown book also claims that Victor Hugo was Grand Master from 1844-1885. Cocteau in *Opium* says, "Victor Hugo was a madman who believed himself to be Victor Hugo." Awkward for Dan Brown, is all I can say.

A few final words about mistakes: Opus Dei members do not wear monk's robes. Brown's albino, Silas, apparently sees very well without lenses—highly unusual for someone with albinism. Brown's hero, Langdon, states, "Originally, Tarot had been devised as a secret means to pass along ideologies banned by the Church" (p. 92). Tarot playing cards (and they were playing cards, not magical texts used by initiates) arrived in Europe from the Middle East in the fifteenth century. The occult Tarot, the progenitor of current Tarot decks, appeared and developed singularly in France between 1780 and 1880. There is nothing ancient about the occult Tarot and they hid nothing from the Churchmen who understood very well what they were about (see *A Wicked Pack of Cards: The Origins of the Occult Tarot* by R. Decker, T. DePaulis, and M. Dummett, 1996).

The number of poor souls condemned and executed by the Catholic Inquisitors is not "five million" as Brown's book claims. Scholars today set the number between 30,000 and 90,000, with most splitting the

difference. And to drive one last stake into Brown's grail myth, the Baigent, Leigh, and Lincoln claim that "holy blood" means "holy grail" originates with Sir Thomas Mallory's misspelling in his fifteenth-century *Le Morte D'Arthur*. Holy Grail should have been *le saint graal* and not *San greal*. Unfortunately, Brown has his "Teacher" proclaim on page 250, "The word Sangreal derives from San Greal—or Holy Grail." And, "Sang Real literally meant Royal Blood."

Brown's Langdon criticizes Christians

who would take the Bible "literally." Yet, in the end, we find Langdon kneeling in awe at the Louvre at the entry pyramid. He finally "knows" where the bones of Mary Magdalene are buried, and perhaps with the cache of secret manuscripts that would crumble the Christian Church. Talk about literal. When pressed to reveal the secret, Langdon argues that he would not "wave the flag" of evidence in the faces of the millions of deluded souls who believe that Buddha was born of a lotus blossom, or Jesus of a literal virgin. "Those who truly understand their

faiths understand the stories are metaphorical." He would not expose the truth because "Religious allegory has become a part of the fabric of reality. And living in that reality helps millions of people cope and be better people." There's more to his argument, but the gist of it is that we should let sleeping dogs lie—I intend the pun—and not throw them any Magdalene bones. *The Da Vinci Code* is a decent thriller if the reader is unaware of (or manages to suspend) the reality that undermines the story.



## Are You Sure About That?

PETER LAMAL

*8 Preposterous Propositions: From the Genetics of Homosexuality to the Benefits of Global Warming.* By Robert Ehrlich. Princeton University Press, Princeton, New Jersey, 2003. ISBN 0-691-09999-5. 342 pp. Hardcover, \$27.95.

Intelligent design is a scientific alternative to evolution: True or false? Okay, well how about this: You really do not have to worry about your cholesterol. How confident are you in your answer, and what is the basis for your confidence? The two above propositions are in the set of eight that Ehrlich considers. His purpose is to help us decide which of the eight "might be true and which are complete nonsense," based on the weight of the evidence for and against each. Ehrlich chose these particular propositions because they are controversial and because they have important public policy implications. At the end of each chapter he gives the proposition a rating according to how well the case for it has been made. His rating scale is based on the "flakiness" of each proposition. Zero flakes means "a reasonable degree of

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confidence that the idea is true based on the evidence, to four flakes, meaning no credible evidence for the idea." Ehrlich acknowledges that his ratings are subjective and influenced by his biases, but says that he will reveal any biases he has. Of course, we can have biases of which we are unaware.

The introductory chapter includes questions that we should ask when considering controversial ideas: How do the proponents of the idea claim to know that it is true? How might the data said to support the idea be interpreted differently? How can the idea be tested?

We are also wisely cautioned against making up our minds too quickly when considering controversial or new propositions. As Ehrlich points out, if we decide about the validity of a proposition too quickly, we can fall into the trap of filtering all relevant evidence through our preconceived view while failing to give contrary evidence sufficient weight. "That trap is the very essence of prejudice."

The introductory chapter also includes a useful set of questions to ask when presented with claims of causality

by proponents of a proposition, as well as a note on statistical significance.

Ehrlich's approach is nicely illustrated in his chapter devoted to the proposition that cholesterol is harmless, advocated by the Swedish physician Uffe Ravnskov. Ravnskov challenges the view, almost universally held by the medical establishment, that high levels of cholesterol in the blood cause coronary heart disease (CHD). Furthermore, Ravnskov believes that high levels of blood cholesterol have little relation to your intake of saturated fats or cholesterol. He also does not believe that arteries are blocked as a result of high levels of cholesterol in the blood.

Ehrlich presents data from Ravnskov and others and then evaluates the evidence. Ravnskov, for example, has presented data showing a weak positive correlation (0.39) between age-adjusted mortality from CHD and percentage of fat in the diet across twenty-two countries. Ehrlich points out, however, that the idea that there are many other variables besides dietary fat that must be taken into account when considering CHD is hardly surprising. At the same time, however, Ehrlich says that "Ravnskov is largely correct regarding the lack of hard evidence linking a high-cholesterol diet and heart disease." Further on, Ehrlich lists six arguments Ravnskov advances to support his view and offers a rebuttal of each.

Ehrlich concludes the chapter by saying that Ravnskov has presented some



convincing data that dietary cholesterol and fat do not, by themselves, have a very significant effect on blood cholesterol and on the risk of CHD. But he says that Ravnskov does not seem to have made his case that cholesterol level is not a significant risk factor for CHD. Ehrlich rates the proposition that high cholesterol is not worth worrying about at two flakes.

The other propositions that Ehrlich considers are indicated by their chapter titles: "Is Homosexuality Primarily

Innate?", "Are People Getting Smarter or Dumber?", "Can We Influence Matter by Thought Alone?", "Should You Worry About Global Warming?", "Is Complex Life in the Universe Very Rare?," and "Can a Sugar Pill Cure You?"

Ehrlich impressively covers a wide range of topics, and we are once again reminded of the tentative nature of many assertions made about the world. When discussing the characteristics of theories that are scientific, Ehrlich says that "falsifiability is the most important of the cri-

teria" used to judge whether a given theory is scientific. But when discussing SETI, he says that its unfalsifiability does not render it nonscientific because "researchers might actually find a signal." This example illustrates the contemporary doubt concerning the weight that should be accorded the Popperian falsifiability criterion.

I believe the vast majority of the readers of this book will learn a good deal, even if they disagree with some of Ehrlich's conclusions.

## Darwin as Comic Book Super-Hero

JERRY KURLANDSKI

*The Sandwalk Adventures.* By Jay Hosler. Active Synapse, Columbus, Ohio, 2003. ISBN 0-9677255-1-8. 160 pp. Softcover, \$20.

Jay Hosler begins his graphic novel *The Sandwalk Adventures* with a parody of a creation myth. Like all parodies, this one extracts the essence of the thing being parodied—just enough to make it recognizable—and presents this essence in an unexpected context. Here we learn soon enough the context of this particular creation myth: it belongs to a colony of follicle mites residing in Charles Darwin's left eyebrow, and refers back many mite-generations to the time when Darwin made his five-year voyage on the *HMS Beagle*.

*The Sandwalk Adventures* is a historical-scientific comic book, if such a genre exists. As a comic book, it relates an amusing series of conversations between Darwin and one of the aforementioned mites, a young female named Mara. We learn that the mites, imagining him to be a god, have built an entire mythology

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around Darwin, whom they refer to as "Flycatcher." Only with great difficulty is the mighty Flycatcher able to convince Mara that he is not a god, that he is not all-powerful and did not, in fact, create the world—which turns out to be much,

species to her, the book starts to fulfill its second role—that of an introduction to the theory of evolution. Hosler is a well-published biologist on staff at Juniata College in Pennsylvania. As a reader, you sense that he's had to introduce the theory

Darwin, thus fulfilling the book's third main function.

Some graphic novels manage to fuse text and drawing into a distinct art form; *The Sandwalk Adventures* is not one of them. Hosler is first and foremost a biologist, not an artist. Still, his work is entirely competent, and often witty, as when he visually puns on the well-known "March of Progress." His previous graphic novel, *Clan Apis*, received a number of awards and nominations, including a 1998 Xeric Award.

*The Sandwalk Adventures* is an odd but cohesive amalgamation of the absurd and the scholarly. The book provides an informative, always-entertaining look into the theory of natural selection and the man who first formulated it. With its clever drawings and engaging style, it should appeal to the specialist as well as the lay person. Because we live in a time and place in which Darwinism seems to be losing rather than gaining public acceptance, perhaps this book, and more like it, could help to reverse the tide. □

**With its clever drawings and engaging style, it should appeal to the specialist as well as the lay person.**

much older than she and her fellow mites traditionally believed. Much of the fun of the comic book side of the novel occurs when Hosler lampoons the other mites who—against all evidence—cling to a literal interpretation of their myths.

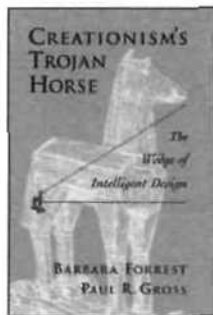
Mara is a curious creature, and she wants to know the true answers to the questions that her colony's myths attempt to resolve. When Flycatcher begins explaining his notions of the origin of the

to students many times, and, in so doing, he's figured out how to present it in an interesting manner without sacrificing accuracy. A reader well-versed in the theory is unlikely to learn much from Hosler's exposition in the graphic novel part of the book, but at the back there is a lengthy annotations section providing details that cannot be served in a comic book format. This section also contains a good deal of biographical information on

NEW BOOKS

*Listing does not preclude future review.*

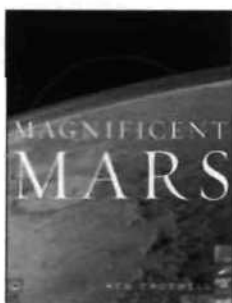
**Creationism's Trojan Horse: The Wedge of Intelligent Design.** Barbara Forrest and Paul R. Gross. Oxford University Press, 2004. 401 pp. \$40, hardcover. This valuable



new book is an authoritative, hard-hitting look at the latest manifestation of creationism, Intelligent Design, not so much critiquing ID's claims (which previous refutations have amply exposed) but exposing the organization and political relations that drive the movement. The system operates on a very detailed plan—the Wedge document, a set of well-articulated goals, strategies, and tactics, which first surfaced in 1999. Lucratively funded, the Wedge-guided ID promoters carry out no science program whatsoever and instead intrude their religiously motivated ideas successfully into educational politics at

local, state, and now national levels. The book analyzes the Wedge Strategy's threat to public education and to the separation of church and state.

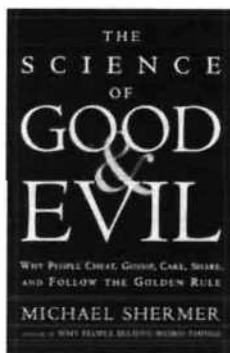
**Magnificent Mars.** Ken Crowell. Free Press, 210 pp. \$60, hardcover. With Mars



all over the news now, this beautifully illustrated large-format book with good scientific text comes along at just the right time. The large color photographs of Mars from a host of Mars-orbiting spacecraft through 2003—and useful color graphics—

put into fine perspective the close-up photos from the surface we are now receiving from this year from the Mars rovers Spirit and Opportunity.

351 pp. \$26, hardcover. The author of *Why People Believe Weird Things* here turns to the question of why people cheat, gossip, care, share, and follow the Golden Rule. The



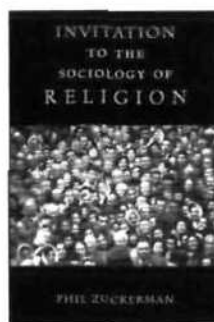
essential questions of good and evil have occupied people for centuries, but here Shermer draws upon more recent work of evolutionary psychologists, biochemists, and anthropologists to instigate a search into the roots of morality and the evolution of our complex ethical systems. Science, he shows, has a lot to tell us about good and evil.

**Whatever Happened to Good and Evil?** Russ Shafer-Landau. Oxford University Press, 2004. 150 pp. \$26, softcover. Since the attacks of September 11, 2001, we have seen a resurgence of the language of good

and evil and a comfort with the idea that some moral standards are objective (true independently of what anyone happens to think of them). In this book, Shafer Landau (professor of philosophy, University of Wisconsin) argues that—contrary to much faddish relativist thinking—some moral views *are* better than others, despite the sincerity of the individuals, cultures, and societies that endorse them. Some moral views are true, others false. Individuals, and whole societies, he says, can be seriously mistaken when it comes to morality. This introduction to such ethical questions is written especially for general readers with no philosophical background.

**Invitation to the Sociology of Religion.** Phil Zuckerman. Routledge, 2003. 156 pp., \$21.95, softcover. This brief guide to the sociology of religion by one of the contributors to our March/April 2004 Science & Religion issue (an assistant professor of sociology, Pitzer University) is far livelier than its title might suggest. Zuckerman confesses that, unlike most irreligious people, he is fascinated by religion. "Religion is a personal fixation. I wonder how it is that millions of

people can believe the manifestly implausible. I wonder how it is that millions of people can devote their lives to, and even die for, that which is ultimately irrational. . . . I am ceaselessly interested in the connection of religion to the arts, to politics, to sex, to war, to ethics, to race relations, to the media, to general construction, to family, to law. . . ." He begins by noting that religion seems to be everywhere. "Some



days it feels like the whole world is religious." (That is true, except in Western Europe.) His guide seems especially relevant now with all the recent popular interest and argumentation about Mel Gibson's movie *The Passion of the Christ*.

**Everyday Mind Reading: Understanding What Other People Think and Feel.** William Ickes. Prometheus Books, 2003. 349 pp. \$25, hardcover. The title doesn't

refer to the outrageous antics of "psychic readers," but to the natural human abilities that we often call intuition or empathy. The author (professor of psychology, University of Texas at Arlington) has been studying such matters for fifteen years, and this is his summary of that research. He developed an innovative video-based procedure for measuring people's empathic inferences and used the procedures to study different aspects of everyday mind reading. He explores the validity of the belief in women's intuition, why twins have similar thoughts and feelings, and broader questions such as, are there ways of detecting when someone has a hidden agenda? And how research on everyday mind reading can be applied to improving parenting skills, improving counseling, or even sales and marketing.



—Kendrick Frazier

# SCIENCE BEST SELLERS

## Top Ten Best Sellers

- 1** ***The Golden Ratio: The Story of PHI, the World's Most Astonishing Number***  
Mario Livio
- 2** ***Cosmic Legacy: Space, Time, and the Human Mind***  
Greg F. Reinking
- 3** ***A Devil's Chaplain: Reflections on Hope, Lies, Science, and Love***  
Richard Dawkins
- 4** ***Power to the People: How the Coming Energy Revolution Will Transform an Industry, Change Our Lives, and Maybe Even Save the Planet***  
Vijay V. Vaitheeswaran
- 5** ***The Geography of Thought: How Asians and Westerners Think Differently ... and Why***  
Richard Nisbett
- 6** ***The Constants of Nature: From Alpha to Omega—The Numbers That Encode the Deepest Secrets of the Universe***  
John D. Barrow
- 7** ***Foundations and Fundamental Concepts of Mathematics***  
Howard Eves
- 8** ***100 Suns***  
Michael Light
- 9** ***Prehistoric Art: The Symbolic Journey of Humankind***  
Randall White
- 10** ***The Selfish Gene***  
Richard Dawkins

By arrangement with *Scientific American* ([www.sciam.com](http://www.sciam.com)), March 2004.

# Let's Beat Them at Their Own Game

PAUL GILES

By profession I'm a comedy writer. By nature I'm a skeptic. You might wonder why I mention both together. In many ways the two are the same thing. In order for me to do my job I've got to be able to pick out the hypocrisies, inconsistencies, and contradictions in people and situations and point them out in an entertaining way. Okay, basically my job description is wise ass, but it's something for which I now get paid instead of getting sent to the principal's office.

Skeptics also look for inconsistencies and contradictions. A perfect example is the oxymoron *creation science*. But here the analogy runs into trouble. This was highlighted by the two articles in the November/December 2003 issue of the SKEPTICAL INQUIRER, Chris Mooney's "King of the Paranormal" and Bryan Farha's "Sylvia Browne: TV Psychic Sidesteps Challenges."

Mooney makes the point that Larry King and his producers air quite a few shows that portray psychics and the paranormal in a favorable light. He then goes on to blame ratings as the reason much more time is devoted to psychics than to skeptics, asking, "[S]hould ratings alone dictate the treatment of the paranormal on a television network like CNN?" Good question. Only there are two things wrong with it.

First, dubbing King a "true lion of journalism" overstates his place in the

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*Paul Giles is a comedy writer. He wrote "Unintelligent Design" in our November/December 2002 issue.*

profession. King is known for asking easy questions of all his guests, rarely following up even when a challenge is clearly called for, and usually not pressing for answers. It's called throwing softballs, and King allows them to be batted over the center field wall like they were tossed underhand to Barry Bonds. It's the style of almost all his interviews. He's the kind of guy whose first question to Adolph Hitler would be, "You wanted to be an artist when you were young, didn't you?" *Larry King Live* is not a news show in the conventional sense, and just because it's on CNN doesn't mean it's going to aspire to the same journalistic standards as that network's other programming.

Second, asking if ratings should dictate treatment is not the question we need to ask. It's a fact that ratings drive everything in the entertainment and news industries, and quite frankly it's hard to see why they shouldn't. Television needs to make money. Putting low-rated shows on the air makes no sense from a business standpoint. No. The question should be, "Why are ratings so high for King's shows on the paranormal, and why doesn't he give skeptics equal time?"

As someone who's worked in the entertainment world, writing for television, radio, and too many comedians, I'd like to answer that. Much as I hate to say it, the psychics are a hell of a lot more entertaining than we are.

The psychics not only tell people what they want to hear, they clearly and confidently provide "answers" to those

seeking comfort and advice. They are personable and charming and everything necessary to promote confidence and rapport with people in an age of media saturation. They wouldn't be in business if they were crabby introverts who didn't care if people liked them.

We, on the other hand, when given the opportunity for rebuttal in the media, come off looking like crabby introverts who don't care whether people like us. We provide no answers, always hedge our statements to appear fair, and counter demonstrations of psychic "skills" with the standard retort: Science hasn't been able to prove the existence of you-fill-in-the-blank. We're everyone's Dad who says, "You can't go to the party," and when asked why, replies, "Because I said so, that's why."

The average person doesn't really care what science has proven or disproven. Most of their contact with scientific thought comes from newspaper and television pieces on the foods they eat. They know that last week margarine was healthier than butter, but this week butter is healthier than margarine, eating a high-fiber diet will or won't prevent colon cancer (depending to whom you talk to), and foods high in fat make you fat, unless you eat nothing but high-fat proteins on the Atkins diet, in which case they'll make you skinny. All that comes from men and women in white coats with a lot of alphabet soup after their names who speak for science. Wouldn't you be confused?

The psychics and speakers to the dead are never confused and never disagree.

They don't change their minds every two weeks, only their specialties, depending on what ability is hot at the moment. In many instances they call on the long, unbroken traditions of things like tarot cards and astrology, which by their staying power lend an air of credibility. The average person doesn't understand that changing theories to explain new information is a much better tradition.

But why can't we be as certain of ourselves outside of our own publications and circles. Mooney mentioned the Showtime series *Penn and Teller: Bullshit!* When I watched the first episode I practically stood on my chair cheering. They not only presented an air of confidence in their disdain for the paranormal and provided easy-to-understand damning evidence, they were *entertaining*. Can we say that? In all honesty, and putting aside our own positive biases toward the people who represent the skeptical view, can we contend that our message is presented to the

average person in a way that it is not only convincing but interesting? Remember, in the pages of SI we're preaching to the choir, and a rather small choir it is. The forces of irrationality are the Mormon Tabernacle Choir, but we're a trio singing in the subway working to be heard over the roar of the passing trains.

Where Penn Jillette called people like John Edward "scum" and "liars" and other names less printable, the most we seem to muster in the general media is a little playground taunting. "Oh yeah? Prove it!" They don't have to. Remember, they have all the "answers." They're believable. They're entertaining and sympathetic. Belief in their powers is a matter of faith, which to the believer is beyond proving.

Penn and Teller have the right idea. Attack but be entertaining. Show how the tricks are done in the popular media. Ridicule and be amusing. A lot of my job is doing that and it works. People are

more open to your ideas if instead of preaching the scientific gospel you point out the inconsistencies of the paranormal in such a way that those people think they're in on the joke.

Which brings me to Farha's piece. A great deal is made of Sylvia Browne's performance on the September 3, 2001, *Larry King Live* show. He presents us with a transcript of a reading Browne gave while James Randi, the other guest on the show, watched and listened. He then reproduces Randi's analysis of her reading which Randi placed on his Web site. It's a good analysis. Unfortunately it's too little too late.

I saw that show. At every point in the reading I could tell how she did it. I heard her get the diagnosis entirely wrong, pick up the correct answer from the caller, twist around her misses to make them seem like hits, and a number of other things not mentioned in the article or on Randi's Web site. When King asked Randi to explain Browne's



Gerald Fried

seeming prescience, I gleefully anticipated his taking her to task point by point, which would have made her look ridiculous to an audience of millions. I waited, but that bus never came. Randi's response? "Larry, you're asking me to explain specific things. I don't know who this woman is who called."

So? He didn't have to explain specific things, just the obvious wrong answers and fishing expeditions. He didn't have to know who the woman was. Who she was would have been relevant only if Browne got everything right. Rather than the triumph this episode is implied to be, it was a disaster. Once again, dur-

ing the entire show, Browne had all the "answers," and Randi didn't try to explain a thing. He sounded arrogant and above it all. There were so many opportunities to make her look foolish and for Randi to be positive and entertaining, and all of them were wasted.

I'm not saying we should all be comedians when it comes to promoting the skeptical view. I'm saying that we'll get more on-air time when people write to shows like *Larry King Live* and say, "I'd like to see more of that skeptic guy. I liked him. He knew what he was talking about." I'm saying Penn and Teller got an entire series of entertaining shows

by going on the offensive outside the rather small world of skeptical media, doing it without fear of legal action because they knew they could easily prove, as we can, that paranormal powers are the province of the self-deluded and the con artist. I'm saying let's not be so self-satisfied that we feel exposés in our own publications seep into the consciousness of the masses. Let's appear on these shows prepared and ready to argue our points without qualifiers. That's when we'll get equal time. Let's beat the Brownes and Edwardses at their own game. We're smarter than them. Let's prove it. □

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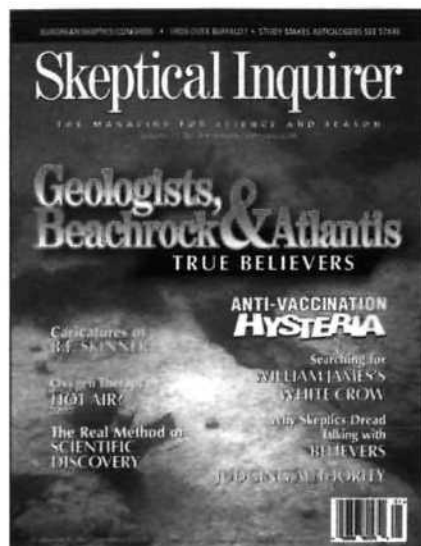
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## Anti-Vaccination Hysteria

I read with interest the article by William J. Hoyt concerning anti-vaccinationism, focusing on the pertussis vaccine ("Anti-Vaccination Fever," January/February 2004). One peripheral point to mention is that the pertussis vaccine currently used no longer causes the annoying but transitory reactions that gave credence to the idea that serious reactions are associated with the vaccine.

More important, this is not an isolated example of the unfortunate effects of anti-vaccinationism. Great Britain is now suffering outbreaks of measles, rubella, and mumps because of unfounded accusations by a British gastroenterologist that the combined vaccine causes autism. Authorities in northern Nigeria have resisted oral polio vaccine because of rumors started by a British journalist that AIDS is the result of contaminated vaccines. In both cases, abundant evidence negates the connection, but once ideas like those start to circulate, they enter into folklore and are difficult to extirpate.

It gives one little comfort to reflect that anti-vaccinationism is as old as vaccines themselves or to understand that once a disease disappears due to vaccination, people begin to doubt that they need it. The paradox is that in much of the world, vaccines are badly wanted but unavailable, while in developed countries they are often attacked.

Stanley A. Plotkin, M.D.  
Doylestown, Pennsylvania

The Netherlands had a measles epidemic only three years ago among people who do not vaccinate because of their extremely con-

servative Protestant religion. They do not question the efficacy of vaccination, but they consider it sinful. There were 3,000 cases of illness and three fatalities.

One of the fatalities was a seventeen-year-old boy on the island of Walcheren. After such a case, the vaccination percentages increase mysteriously and the epidemic ends. This same area was also hit by a polio epidemic some ten years ago. These people live in close-knit communities with little contact with the outside world. They have a separate high school, and during the epidemic, physicians who wanted to educate the students were not allowed to use the word *vaccination*.

Memory is short in my province of Zeeland: the provincial GGD (Joint Health Services) warned recently that the vaccination percentage for D(k)TP in Zeeland (89.9 percent) was below the international standard of 90 percent, not to mention the general Dutch average of 95.3 percent.

But "fortunately," Zeeland also has a classical homeopath who specializes in children and who can quite easily treat all these diseases and their complications with homeopathy. He also successfully treats children who get diabetes, multiple sclerosis, or other serious illnesses after their vaccinations. Our present laws allow this kind of person to practice medicine—he is not a medical doctor. The Netherlands is a paradise for quacks.

Marie P. Prins  
Oost-Souburg, The Netherlands

The anti-vaccination misinformation being circulated is indeed disturbing. What is even *more frightening* is that the naturopathic physician in our town is selling the "Opti-Protect Vaccine Alternative," which she states is "a homeoprophylactic protocol designed to confer immunity against standard childhood diseases." She even issues a certificate to parents that certifies that "the above individual has been protected against the standard grouping of childhood diseases including: diphtheria, German measles, HIB, measles, mumps, polio, tetanus, and whooping cough."

My husband went to the office to do his own investigation and was flabbergasted to hear that this naturopath could mix up a vaccine against most every known disease (or as many as my husband could think up at short notice). So misinformed parents can now make the decision not to vaccinate and still feel their children are protected with these fraudulent vaccines. The vaccines come in capsule form for the amazing price of US\$250.

We have called Health Canada and every consumer-protection organization we can find, and there doesn't seem to be anything one can do against this public-health fraud.

I just picked up your magazine at a local grocery store, and suddenly I don't feel so alone. Thank you for your excellent publication.

Audrey Cope  
Qualicum Beach, British Columbia  
Canada

I know personally that pertussis is a serious disease—I had a case myself three years ago and was extremely sick for over a month. However, the numbers presented by Mr. Hoyt are useless, since neither the whole-cell vaccine nor the acellular vaccine, when given in early childhood, provide protection after age ten.

In addition, in the U.S. (and probably in other countries), reporting of pertussis is highly variable. My anecdotal experience indicates that doctors normally do not even consider pertussis as a diagnosis. Only an estimated 10 percent of pertussis cases are reported, and underreporting is greater among adults.

As a result, the incidence statistics are suspect—an increase in awareness of pertussis by doctors could easily cause a dramatic increase in reports. And since the incidence statistics include both incidence among children younger than ten and children and adults older, no conclusions about vaccine effectiveness or vaccination rates can be drawn from them. For example, Guris, et al. reported that overall increases in pertussis incidence in the U.S. between 1990 and 1996 were due to increases in rates among ten to nineteen-year-olds, while rates among children and infants were stable.

I favor vaccination for pertussis with the acellular vaccine, but think the arguments in Mr. Hoyt's paper do not hold up to critical examination.

Don Katz  
Madison, Wisconsin

## Bimini Beachrock

The article by Eugene A. Shinn was excellent ("A Geologist's Adventures with Bimini Beachrock and Atlantis True Believers," January/February 2004). He reviewed the history and placed the contratemps in



context, provided a number of helpful photographs, and included a thorough explanation of the scientific inquiry in terms that I, a layman, could understand. However, sad to say, as the author recognizes, the true believers will remain unconvinced and in the dark. They seem to have turned off their critical thinking capability, if they ever had it.

You may be aware that in 2003, the Bimini "road" was shanghaied by the author of *1421: The Year the Chinese Discovered America* [reviewed in *SKEPTICAL INQUIRER*, November/December 2003]. Briefly, part of his tale, which he presents as nonfiction history and which he continues to flog with a straight face, is that twenty ships of a 1421 Chinese fleet sailed into shallow water, eight hit reefs, ripped their wooden hulls, and put in at Bimini Island for repairs. They built the "road" with their ballast rocks, a "slipway" to facilitate pulling the ships up, out of the water for repair.

Never mind that the "road" is more or less flat and parallel to the beach and never would have accomplished its stated mission. *1421* is full of such audacious nonsense. The author has no real evidence for any of the other claims I have examined, only an awe-inspiring imagination. Sources are cited, to be sure, but it turns out they don't support what the author claims.

Bill Hartz  
Long Beach, Washington

## Talking with True Believers

This is one skeptic who does not "dread conversations with true believers" (Phil Mole's "Fallacies and Frustrations," January/February 2004). I enjoy them—always have. Rather than battling your friend's belief systems with a sword (as depicted in the accompanying cartoon in the article) it's better to encourage the true believers to question your disbelief. This tactic will make them less defensive and more open to your critical way of thinking.

The benefits of playing the "gentle skeptic" (for want of a better word) are: (1) you do not have to be an expert in every cult, pseudoscience, or religion and thereby risk losing a skirmish on an imperfect offensive battleground; (2) each challenge helps you to perfect your own personal rational epistemology; and (3) anger and confrontation are avoided and you keep your friends (or students) in the long haul.

President Eisenhower once said, "I don't care what a person believes in as long as he

believes in something." When people find out you don't believe in anything you can't keep them away. It's a lot of fun!

John C. Holden  
Omak, Washington



Thanks for an entertaining read. It brought back memories of many frustrating discussions I have participated in. I take issue, however, with Mr. Mole's comment near the end of the article: "... these same abilities do not . . . exempt us from the responsibilities of teaching others." I submit that while it may benefit society and perhaps us to teach others when opportunity presents itself, the responsibility actually lies with the others themselves. When a person's choice lies between a comfortable belief and an uncomfortable challenge to that belief, that person often chooses comfort, by free choice. I know this to be true, because I have on occasion actually caught myself doing it.

Juergen Baumann  
Vancouver, British Columbia  
Canada

## How Scientists Discover

Burton S. Guttman's claim in "The Real Method of Scientific Discovery" (January/February 2004) that "Deduction simply allows us to work through verbal puzzles and determine, for instance, that if some Aargs are not Blobs and all Crans are Blobs, then some Aargs are not Crans" is wrong, because there is much more to deduction than that. Elementary logic is usually introduced in terms of such puzzles and simple deductions. But consider that mathematics is introduced

in terms of numbers and counting to children. Guttman's claim is akin to someone claiming that "Mathematics simply allows us to work through simple arithmetic and determine, for instance, that 6 times 7 is 42."

In an earlier article (May/June 2003), Massimo Pigliucci also dismissed deduction as trivial, and I wrote a letter (September/October 2003) pointing out his mistake. I am disappointed now to see another article where the writer also misunderstands the scope and application of logic. Readers of the *SKEPTICAL INQUIRER* deserve an accurate and thoughtful explanation of the role, power, and limitations of logical deduction.

John Grant  
Baltimore, Maryland

Burton Guttman's argument (January/February 2004) that science is based on abduction, not induction, overlooks that abduction is a *situational description of induction*.

Inductive inferences posit predictions about the unknown based upon generalizations derived from patterns within the known. But Guttman claims: "A scientist does not make a lot of particular observations and then try to generalize from them to some hypothesis H." Instead Guttman proposes this abductive inference as an alternative to induction:

1. Some surprising phenomenon P is observed.
2. P would be explicable as a matter of course if H were true.
3. Hence there is reason to think that H is true.

However, the second premise requires induction to determine what would be expected to occur in the normal course of events. Describing inductive inference, David Hume observes: "We transfer the past to the future [. . . and] we transfer all the different events, in the same proportion as they have appeared in the past" (in *An Enquiry Concerning Human Understanding*). To determine what would be "explicable as a matter of course," we must consult past experience and detected patterns therein. From that we hypothesize probable courses of events in the future. In other words, we transfer patterns from the known to the unknown via classical Humean induction.

Therefore, abduction does not supplant induction but instead usefully describes it within the situational context in which it occurs. Despite any number of challenges over the years, Hume remains correct,

induction is the method of experimental, or scientific, reasoning.

Ian Goddard  
Rockville, Maryland

## Judging Authority

Jere Lipps's article "Judging Authority" (January/February 2004) was well timed relative to an argument I've been having with some friends who are psychotherapists. I have repeatedly challenged their "authority" to judge people, especially when some of their behavior is at least questionable. However, their tendency is to stack the deck in their favor. Using the following "diagnoses"—only a partial list—taken from the *DSM-IV*, their bible of disorders, they are capable of declaring those who challenge them of having a mental disorder.

- 31281: Conduct Disorder, Childhood-Onset Type or Oppositional Defiant Disorder
- 3129: Disruptive Behavior Disorder NOS [not otherwise specified]
- 31381: Oppositional Defiant Disorder
- 3152: Disorder of Written Expression
- V1581: Noncompliance with Treatment
- V7101: Adult Antisocial Behavior
- 31234: Intermittent Explosive Disorder
- 30023: Social Phobia

I wonder if that's how the Soviets kept their dissidents in the psychiatric institutions and how people in our own society are often marginalized in the same fashion.

Timothy P. Scanlon  
Hyattsville, Maryland

## Explanations Must Predict

As much as I like Massimo Pigliucci, I must take issue with his recent argument that scientific explanations don't need to predict anything (January/February 2004). I am quite certain that is untrue. Explanations must predict something, or else we could never find or present any evidence those explanations were true. Contrary to Pigliucci's thesis, the necessary role of successful prediction is true of every claim accepted as scientific fact. His examples only prove this point against him.

Consider tornadoes. Our scientific explanation of tornadoes certainly does generate predictions: tornado warnings are based on the fact that the explanation for tornadoes tells us the conditions required for and con-

ducive to tornado formation. So we can identify times and geographical areas where tornadoes are likely or unlikely, possible or impossible, and even estimate their probability of occurrence. After all, the ability to predict when something is probable is still a prediction (consider quantum mechanics). And it is precisely because these predictions have been successful (statistically in the field and, not incidentally, in recreations of tornado phenomena in the laboratory by recreating the hypothesized conditions) that our explanation of tornadoes is accepted as a scientific fact. Otherwise, it would not be. At best, it would join the category of "untested hypotheses" that is filled by, for example, quite a lot of cosmological theory. So our explanation of tornadoes does allow predictions (in the field and in the lab), and Pigliucci is wrong to claim otherwise. And that explanation is only accepted because its predictions have proved successful.

As for chaotic systems (Pigliucci's one other example), if we know the defining equation for a system, we can predict the pattern its data will exhibit (the kind of shapes and frequencies it will exhibit, and so on). Even though, as with tornadoes, we cannot predict the exact and specific dips and swells in any given pattern of data, we can still predict the overall shape and behavior of that data over time. And it is precisely because chaos theory can predict just such particular patterns in data that the scientific community believes it is a correct explanation of those patterns. And let's not forget the fact that chaos theory predicts that certain kinds of computational technology (those that employ nonlinear calculations) will in certain specific circumstances be more successful than others (those that employ linear calculations), and this has been borne out in practice, as nonlinear computation has been employed to improve even cell phones. So once again, both in the field and in the lab, chaos theory makes predictions, and is accepted as scientific fact only because it makes those predictions and those predictions have come true.

Richard C. Carrier  
Columbia University  
New York, New York

## Relics Not Worshipped

I found Massimo Polidoro's column on liquefaction miracles involving blood relics ("What a Bloody Miracle!" January/February 2004) very interesting and enlight-

ening. The opening paragraph, however, contained a misstatement I wish to correct, and it failed to mention what I think many scientists would consider the most interesting relic in Italy.

Polidoro writes, "Even personal garments that belonged to martyrs and saints are still kept and worshiped in various Italian churches." Not exactly. Catholic doctrine reserves worship for God alone, not for relics or even for the saints with whom relics are associated. Relics are physical objects associated with people who had an exemplary relationship with God. They can serve as foci for worship (of God), but they are not themselves objects of worship.

Scientists visiting Florence may be interested and surprised to find the finger-bone of a revered seventeenth-century Italian displayed in an ornate reliquary in the Institute and Museum of the History of Science. The finger belonged to Galileo.

Carmen Giunta  
Associate Professor of Chemistry  
Le Moyne College  
Syracuse, New York

## Science/Pseudoscience Editorial

Thanks for your upbeat and informative editorial ("Science Always Trumps Pseudoscience," January/February 2004). If traditional pseudoscience is on the decline, that is excellent news—but there are other negative trends that worry me. I have a growing concern over limitations imposed on research for political or social reasons. Biotech firms are leaving Silicon Valley because there are so few stem-cell lines available in the U.S. for medical research. Those who control the U.S. census are unwilling to use standard statistical approaches to correct for sampling errors. In California there has been a move to stop collecting ethnic data, one effect of which would be to make it impossible to identify race-based inequities in the application of education. Voices are often raised against collecting and analyzing information that would determine the effectiveness of laws, the social consequences of stiff sentences for marijuana users, or the deterrent effects of capital punishment. The DOE is still using "lie detector" screening to identify security risks. No one seems to be interested in evaluating the effectiveness of antiterrorism initiatives such as passenger screening in airports. And it is difficult to undertake rational comparisons of the risks of basing an

energy policy on fossil fuels versus nuclear generation of electricity.

With a level playing field, science will win, but I am less confident if the playing field is tilted for ideological reasons. Advances in science often have negative impacts on some segments of society. If our leaders perceive the costs of new knowledge as unacceptable to them or their constituents, they could effectively discourage certain lines of research.

David Morrison  
(CSICOP Fellow)  
Saratoga, California

I am having trouble with an apparent inconsistency in the January/February 2004 issue.

On page 4 [Editor's Note]: "Every PBS *Nova* television show and countless others on the Discovery Channel and elsewhere are repudiations of pseudoscience."

On page 34: ["Fallacies and Frustrations"] "This kind of ignorance is especially prevalent among paranormalists, who often learn everything they know about a particular poltergeist haunting or UFO abduction by watching Discovery Channel programs, and aren't aware of the strong counterarguments and other parts of the story withheld from them. . . . The public often fails to realize that programs such as those found on the Discovery Channel have a well-documented policy of denying airtime to anyone skeptical of paranormal claims."

Can you resolve this?

Elin Larson  
Purcellville, Virginia

*Kendrick Frazier replies:*

*Our colleague David Morrison is certainly correct: Distortions, misuses, and abuses of science in the policy arena are a serious concern, perhaps especially so now. As I wrote in the latter part of my editorial, we intend to devote more attention to such issues in SI (see News & Comment this issue, page 5).*

*As for the paradox noted by Elin Larson, I was trying to encourage those dedicated, hard-working skeptics who sometimes get discouraged by pseudoscience's perennial popularity. I think my general point still holds, that "good science is everywhere" and that, in the long run, "pseudoscience is no match for it and never will be." But in regard to the television networks that focus on public affairs and documentaries, and even some material published in scientific journals, I should have tempered my praise with a phrase such as "with notable exceptions."*

## Vaccine News

The News and Comment item "Studies Clear Childhood Vaccine of Links to SIDS, Autism," states: "A study released in March 2003 confirmed that there is no evidence of a link between Sudden Infant Death Syndrome (SIDS) and multiple vaccines given in infancy. Marie McCormick, head of the committee that wrote the March report, said that 'although the timing of infant vaccinations coincides with the period is most likely to occur, parents should rest assured that the number and variety of childhood vaccines do not cause SIDS.'"



Not SIDS, maybe, just sudden death.

A quick glance at the report's summary, found at [www.iom.edu/report.asp?id=5391](http://www.iom.edu/report.asp?id=5391), shows a much grimmer picture of the relationship between vaccines and infant death. It's a picture you hide by including only one small part of their findings.

Actually, the Committee found that the evidence is inadequate to accept or reject causal relationships between SIDS and several vaccines (Hib, HepB, OPV, and IVP). Nor is it adequate to accept or reject a causal relationship between exposure to multiple vaccines and sudden unexpected death in infancy. Nor is it adequate to accept or reject a causal relationship between HepB and neonatal death. In other words, these vaccines still could be causing deaths of infants.

Finally, the report stated that diphtheria, toxoid, and whole-cell pertussis vaccines are causally linked to death from anaphylaxis in infants. And yet you want to reassure us that parents are worrying needlessly about vaccines? I suppose you think it's okay if some babies die unexpectedly in infancy, as long as the death's not labeled SIDS. You pulled out the one positive finding from the report and ignored all the others, which indicated that further research is needed to prove or disprove links between vaccines and death, and you held back the fact that a link was found between three vaccines and death from anaphylaxis.

Am I worried about vaccines' effects on my children? Yes. And your misrepresenta-

tion of the facts, as usual, hasn't done anything to sway me.

Amy Nelson  
nelsonkritter@hotmail.com

*Benjamin Radford replies:*

*Instead of a "misrepresentation of the facts," I think we have a misunderstanding of science. A link between SIDS and vaccines has been claimed by some doctors and anti-vaccination activists. That claimed link has been repeatedly scientifically studied, and, as Nelson herself points out, "the evidence is inadequate to accept or reject causal relationships." That is how science works: variables and groups are controlled, tested, and compared, and either a significant link is found or it isn't. In this case, the evidence did not support the claim.*

*Nelson seems to be arguing backward, saying that the link was not disproven. She is correct that vaccines could still be causing death to infants. It's possible; no medical treatment is entirely risk-free, and science does not operate on absolute certainties. As always, the issue is not what is possible but what conclusions the evidence supports. The larger issue, and one that Nelson entirely sidesteps, is the real risk to children: The evidence strongly suggests that children are at far greater risk from childhood diseases than from the vaccinations given to prevent them.*

## Errata Corrige

I beg to differ with the conclusions of the article by Kendrick Frazier [News and Comment] in the January/February 2004 issue. Some time ago, I purchased two magnetic shoe insoles for the sum of \$52.

After using them diligently for a few weeks, I found a significant difference with respect to ordinary leather insoles: the magnetic insoles hurt like hell!

Peter Castruccio  
Gambrills, Maryland

## Limitations of Knowledge

In a letter (January/February 2004), Rui Vieira offers Putnam's "Brain-in-a-vat scenario," a version of Descartes's "dream or demon" hypothesis, as a limitation of knowledge.

All species of this hypothesis essentially say that a brain cannot know whether statements about nature are accurate if all information is from sources other than external reality. The conclusion is dictated by the

premise and thus is unremarkable.

More simply, doubt can cheaply be cast upon any finding by repeatedly noting the obvious possibility that, for whatever reason, information or interpretation may be inaccurate. This provides a shabby refuge for people who think it witty and wise to constantly suggest that science may be wrong, regardless of evidence.

We no longer regard mental experience as produced by a passive brain's interface with externality. To prevent the vatted brain's independent activity, Putnam's computer would have to supply the brain's internal processes as well. But such a brain would not meet the functional definition of a human brain. As a nonfunctioning attachment to the computer, it would not even exist in a systemic sense.

A further fallacy is that acknowledging doubt renders all statements equally doubtful. If we were either ignorant of doubt or certain of it, we would consider all statements equal in probability. Doubt informs us to assess accuracy in terms of probability. Behavior of humans and at least some other animals, such as chimps, indicates that they are capable of doubt and they investigate the probable accuracy of explanations for perceived experience.

Information in nature vacillates between degrees of probability and certainty. As physicist Heinz R. Pagels pointed out, information originates in the subatomic realm on a probabilistic basis. But the resulting information that enters the macrocosm has shed its probabilistic, or "fuzzy," character.

If knowledge must be stated in terms of probability—if we are philosophically barred from certainty—this is not a practical limitation on science. After all, if a given finding proves to have only a particular probability of accuracy, that simply leaves science more to discover.

I doubt, therefore I am.

William S. Bunn  
Algonac, Michigan

The principal job of a competent philosopher is to explain away ridiculous ideas of other philosophers. The principal ridiculous idea is that a capable thinker can hold the notion that material bodies do not exist but are only imagined.

Hilary Putnam's brain-in-a-vat scenario, as Rui Vieira terms it, would obviously not be evidence against "justified knowledge of the real world," even if it were true. Both brains and vats are matter, if one wanted to

use different words, like *spiritual*, they would nevertheless have characteristics that we mean when saying, *material*—separate existences in a space.

The brain-in-a-vat description may be only an illustration of how a material scientist could deceive a material victim, but even there it is a failure. According to Vieira, Putnam writes as though unaware that all conscious beings have bodies with needs, and that, devastatingly to philosophical idealists, these needs are constantly changing. Even Bishop Berkeley had to assume that God was often making him feel hunger that led him to suppose that he was breaking crusts of bread to put into an idea of a stomach. The foolishness of this train of thought would have led a less opinionated thinker to give up his reasoning even if he had to turn atheist. . . .

Harry E. Mongold  
Manhattan, Illinois

It seems strange that we still discuss Cartesian skepticism and Kantian categories (as in Rui Vieira's letter) in response to earlier discussions when the evolutionary development of living beings has long been accepted. In a sense, Kant was correct, that our senses of space and time are imposed from outside us, but for the wrong reason. We sense that the world has three dimensions and runs according to time, because that is the correct view of the world. Any animal species will tend to develop those senses that provide accurate and useful information about the world in which it lives. An animal whose senses depict the shape of its world in only two dimensions will suffer from competition with animals who see the world in three dimensions (except when the animal with two-dimensional vision lives only in niches in which lack of three-dimensional perception is of little importance).

An animal whose senses depicted the shape of the world in four dimensions would never develop in a three-dimensional world, only in a four dimensional world. The same argument is commonly made about the sense of smell, but without any of the epistemological uncertainty that we have applied to the sense of space. We lack an acute sense of smell because our ancestors lived in environments where smell was not very useful, while dogs have an acute sense of smell because their ancestors lived lives in which the sense of smell provided very useful and accurate information. There is no more reason to apply epistemological uncertainty to the sense of space than to the sense of smell.

In summary, Darwinian evolution pro-

vides an adequate explanation for the congruence between the world that exists and the information that our senses provide about the existence of that world. It is true that our senses can be misled, as when we perceive the sequence of static images on a motion-picture screen as continuous motion, but we can explain that phenomenon in terms of the real world. It is true that we have no sense of radio waves, but explanations based on our perceptions of the world demonstrate that they exist; we don't directly sense them because our ancestors could make no use of them.

John Forester  
Lemon Grove, California

Ralph Estling replies:

*My thanks to Rui Vieira (Letters, January/February 2004) for agreeing that "there is a great deal of absurdity in continental philosophy." He then goes on to admonish that this absurdity doesn't apply to analytic philosophers like René Descartes and Hilary Putnam.*

*A good philosophical thing to do before admonishing someone is to read what he has written. The philosophers I was "overly dismissive" about in my reply (July/August 2003) were those in practice from the late eighteenth century onwards, starting with the German Idealists, and going on from them. Descartes died in 1650. Putnam admittedly is of more recent vintage. Nevermind. The point is that both carried skepticism to heights far beyond the gravitational pull of sanity. (How do I know I exist? Because I think. Ah, but how do you know you think and are not merely a disembodied brain kept in a vat of nutrients by some insane computer? And so on.)*

*Speculation about the unreality of external reality preceded Descartes and Putnam by almost four thousand years, forming the backbone of both Hinduism and Buddhism. Life, on the other hand, is short and idle speculation, speculation for which no evidence exists or can exist, is long, not to say tedious, pointless, and very silly.*

*All new ideas given out for public consideration should possess three ingredients: 1) a real possibility that they could be true, 2) that they are important, and 3) that they are original. All three. Two out of three isn't enough. The last philosopher to manage this was David Hume (1711–1776). His dates are significant. By the middle of the eighteenth century, science and scientific thought had become well established in the West, and so philosophers and their "natural philosophies" were no longer required. Sitting in easy chairs and informing the world what was the true nature of things was no*

longer sufficient. You now had to go out and learn something, get your hands dirty, perhaps even stink up the parlor with nasty chemicals. If you wanted to tell the world about science, you first had to learn something about it. This fact has yet to implant itself in the brains of many modern "philosophers of science."

So in the last two or three decades of the eighteenth century, philosophers gave up the unequal battle with science and opted to become pedants. They no longer wrote for intelligent readers but only for each other, half of them proclaiming the obvious, the other half denying it. It all made work for the working academic. . . .

Rui Vieira has also submitted another letter, but I think this discussion has consumed enough space for now.—EDITOR

## Worries About Terrorism

Regarding our response to Pinker and Tite's bewilderment (Letters, January/February 2004) over our comments of how much people worry about being victims of terrorism, we grant that it is difficult to assess hypothetical situations quantitatively. Our primary resource is a Web compilation of polls on terrorism: [www.pollingreport.com/terror.htm](http://www.pollingreport.com/terror.htm). A sample question that has been asked in CNN/USA Today/Gallup polls almost monthly since 9/11 is "How worried are you that you or someone in your family will become a victim of terrorism: very worried, somewhat worried, not too worried, or not worried at all?" Responses run about 10 percent in the "very worried" response and around 30 percent in the "somewhat worried" category. We grant that it is a bit ambiguous how "worry" translates into probability, but these responses appear to be considerably stronger than supposing that they are "at some risk, though not at high risk."

Alan W. Harris  
Senior Research Scientist  
Space Science Institute  
La Canada, California

## Arrogance, Not Skepticism

If you're a skeptic, you're a skeptic. What's wrong with that? When Myra Jones was respectfully skeptical of Kimball Atwood's article for lambasting NCCAM, was she out of line? Judging from Atwood's reply, "Pointing to the failings of 'mainstream medicine' is irrelevant to criticism of CAM."

But how else can we "compare relative value" if we are only to talk about the failings of what he refers to as the "paranormal?" Atwood came across as a bully for one-sided skepticism.

Arvey Olsen  
Okotoks, Alberta  
Canada

Kimball Atwood is not believable. If he has some pre-history with Myra Jones, he should state what that is. To launch into the kind of hostile, provocative response that he does is not skepticism but merely arrogance. To characterize Jones's letter by saying that "it demonstrates several misrepresentations and fallacies common to apologies" is not justified by the contents of her letter.

I also have the feeling that some writers in *SI* seem to come with a chip on their shoulders, which is so evident that it gets in the way of any serious investigation of alternate points of view. Atwood's responses are a case in point. . . .

Bill Aird  
Willowdale, Ontario  
Canada

## Growing Skeptics

Over the last few years, I have come to realize the importance of every skeptic being able to talk about being a skeptic. One of the absolute best resources for me to fine-tune my skills as a skeptic is the Skeptic's Toolbox in Oregon. We need to get more people versed in analyzing extraordinary claims and the extraordinary evidence that is often presented to support the claims.

I think that the Toolbox is a valuable resource that needs attendance by more people. To stimulate this, I challenge the folks who return to the Toolbox to bring someone with them or to sponsor someone through a scholarship of some sort. [The next Toolbox will be held August 12–15, 2004.] I'm sure that CFI can find a student or skeptic who could use some help to attend. I for one will bring a person with me next year or I will notify CFI by June that I will sponsor one person who they think will benefit from attending.

I hope that others who keep coming back will think about this and hopefully some will be able to make a similar commitment.

Herb Masters  
San Carlos, California

## . . . 'And' a Correction

In a letter to the editor Victoria Simmons wrote in response to some remarks by Steven Flora (Letters, January/February 2004), we accidentally omitted a crucial "and." The sentence as she submitted it read properly: ". . . he asserts that 'menstruation was celebrated by females of the ancient Celtic and Druid religions.'" We apologize for dropping the "and."—EDITOR

## Inappropriate Art

It is with a mixture of chagrin and sorrow that I write. No, I am not canceling my subscription, but I do wish to protest the cartoon on page 36 of the March/April issue.

I can think of no acceptable reason to provide your readers with such a negative, caricatured stereotype of a religious Jewish man, presumably a rabbi. Considering how open anti-Semitism has become in the world, would it not have been better to simply show a rabbi with a bishop and leave out the preposterous nose? Nah. Even if anti-Semitism were at an all-time low, it still would not be appropriate.

Perhaps the artist is at fault, but more so you who after all looked at it and approved it for publication. Please, a bit more sensitivity in the future.

Bertram H. Rothschild  
Aurora, Colorado

Several other readers complained about an illustration depicting a man in rabbinical garb and carrying the Torah with exaggerated facial features which can easily be interpreted as physical stereotyping of those of Jewish ethnicity. We apologize to readers who were offended.

The letters column is a forum for views on matters raised in previous issues. Letters should be no more than 225 words. Due to the volume of letters not all can be published. Address letters to Letters to the Editor, SKEPTICAL INQUIRER. Send by mail to 944 Deer Dr. NE, Albuquerque, NM 87122; by fax to 505-828-2080; or by e-mail to [letters@csicop.org](mailto:letters@csicop.org) (include name and address).



# THE COMMITTEE FOR THE SCIENTIFIC INVESTIGATION OF CLAIMS OF THE PARANORMAL

AT THE CENTER FOR INQUIRY-INTERNATIONAL (ADJACENT TO THE STATE UNIVERSITY OF NEW YORK AT BUFFALO)

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The snapshot includes galaxies of various ages, sizes, shapes, and colors. The smallest, reddest galaxies, about 100, may be among the most distant known, existing when the universe was just 800 million years old. The nearest galaxies—the larger, brighter, well-defined spirals and ellipticals — thrived about 1 billion years ago, when the cosmos was 13 billion years old. NASA issued this image March 9.

Credit: NASA, ESA, S. Beckwith (STScI) and the HUDF Team

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