

# Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

Volume 25, No. 6 • November/December 2001

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Communication  
Studies:  
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On the cover: From the Mary Evans Picture Gallery, London. A spirit séance in a garret on a winter evening in Germany. Illustration by Hans Baluschet, 1906.



## EDITOR'S NOTE

### *The Face of Evil*

I write only a week after the terrible terrorist attacks on the World Trade Center towers and the Pentagon. The evil of these acts is almost too much to comprehend. We deal in these pages regularly with, among other things, the by-products of unreason, irrationality, ignorance, intolerance, deceit, and dogmatism. We occasionally examine issues surrounding extreme religious beliefs. Here all this and the worst political and cultural extremism were combined in a violent mix of hatred and cold, calculated conception. Where can we find solace? In all the highest manifestations of the human spirit that we have since seen demonstrated. Where can we find understanding? I don't know. I recall Jacob Bronowski, in *The Ascent of Man*, reaching into the mud and ashes of Auschwitz, where evil was manifest in the twentieth century, and telling us, "That was not done by gas. It was done by arrogance. It was done by dogma. It was done by ignorance." And, in both cases too, it was done by hate.

\* \* \*

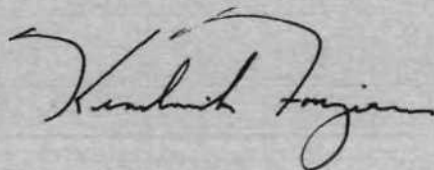
It may be awhile before the entertainment media and the paranormal promoters get back to their old topics with the same force. But you can bet they will. One of the pre-attack hot topics was the spiritualism and paranormal bunk of John Edward and other media-savvy people who claim they can communicate with the dead. In this issue, we critique this modern-day mediumistic spiritualism from two directions.

One is a scientific critique by Richard Wiseman and Ciaran O'Keeffe of a widely reported published paper by Gary Schwartz and colleagues. Schwartz et al. reported two studies this year they said showed that mediums appeared to produce accurate information about the deceased under conditions the authors said "eliminate the factors of fraud, error, and statistical coincidence." Wiseman and O'Keeffe find serious flaws in the experiments. The researchers did not employ blind judging, they used an inappropriate control group, and they did not have sufficient safeguards against sensory leakage. They say it is impossible to use these studies as evidence of mediumistic ability.

The other is a fine report by our knowledgeable Investigative Files columnist Joe Nickell, "John Edward: Hustling the Bereaved." Joe shows how the modern-day spiritualism of John Edward (one of the five mediums Schwartz et al. claimed fared well in their tests), James Van Praagh, Sylvia Browne, and others compares with the long-discredited nineteenth century séance-type spiritualists that Houdini and others exposed. Joe finds it very useful to show evidence of the actual methods these modern-era TV mediums use. He describes some of their techniques, including cold reading, "hot reading" (getting information in advance), inflating "hits," ignoring or reinterpreting misses, and even browbeating sitters into thinking a miss is *their* fault. He also reports on one clear example of out-and-out cheating.

\* \* \*

We conclude our 25th anniversary observance in this issue with articles by Lee Nisbet and Barry Karr and a selection of SKEPTICAL INQUIRER covers from this fast-moving past quarter century.



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THE MAGAZINE FOR SCIENCE AND REASON

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## Astrology Schools Seek—And Get—Academic Recognition

### Accreditation Commission Approves Astrology School

KEVIN CHRISTOPHER

The Astrological Institute in Scottsdale, Arizona, received its new nationwide accreditation from the Accrediting Commission of Career Schools and Colleges of Technology (ACC-SCT) in September 2001—an apparent first in astrology.

The Astrological Institute offers full degrees in this ancient Babylonian art of divination, which is based on the premise that the positions of stars and planets affect people's personalities and fates. Belief in the practice persists despite the lack of any reliable scientific evidence that it actually works, according to Andrew Fraknoi, a CSICOP fellow and chair of the astronomy department at Foothill College in Los Altos Hills, California. "Although astrologers like to pretend such evidence does exist," says Fraknoi, "astrology has in fact been tested in dozens of excellent scientific trials, and it has consistently failed them. There's simply no evidence that astrology works—that it predicts anything or categorizes people in any way that can be used to help them."

Commenting on the Astrological Institute's accreditation in a recent Associated Press story, Judith Eaton, who heads the Council for Higher Education Accreditation in Washington, D.C., said that the accreditation does not validate astrology, but only recognizes that the school fulfills its promises to students.

Scientists like Fraknoi dispute Eaton's distinction between the validity of the subject taught and quality of service to students. "Accrediting a school for a technique which has no demonstrable basis in fact seems to be the very opposite of what accreditation should be about. The notion that accreditation

only recognizes that the school fulfills what it promises its students' is patently absurd. If a school were to promise that it would teach techniques for flying by leaping off cliffs with no equipment, I doubt any accrediting agency would rush to give them official sanctions. There should be similar hesitation about

accrediting a school of astrology, which cannot demonstrate the reality or efficacy of what it teaches."

In an August 28, 2001, interview with

*ACCREDITATION COMMISSION APPROVES ASTROLOGY SCHOOL*  
Continued on page 6

### Astrology in Seattle: Kepler College Looks to the Stars, But It Is Not Accredited

MARK G. KUZUK

The Higher Education Coordinating (HEC) Board of the state of Washington issued on March 9, 2000, a Certificate of Authorization to Kepler College of Astrological Arts and Sciences—located in Lynnwood, Washington, just outside of Seattle—to offer degree programs in Bachelor of Arts in Astrological Studies, Master of Arts in Astrological Counseling, and Masters of Arts in Astrological Studies.

"The founding of the college will lead to heightened public respect and expectations of what astrology is capable of providing to the full spectrum of society," Enid Newberg, president of the new college, said in a news release when the state authorization was finally granted.

According to Newberg, thirty-one students enrolled in July 2000 for Kepler's first term of all-Web-based classes—about half the number Kepler expected, according to its application to the HEC Board. Their ages ranged from seventeen to seventy-one and were geographically spread throughout the United States and other countries. Kepler's third term, which ended in the summer of 2001, began with twenty students. Newberg says thirteen new students and eighteen returning students are attending next academic year, about one quarter of the 119 students expected by Kepler's Board. Newberg expects

enrollments to increase once the masters program gets underway.

The first year BA curriculum starts with courses in the history of astrology, such as *Astrology in Medieval Civilization*, which covers astrology in its religious and cultural contexts from the beginning of the Christian Era through the European Renaissance; mathematics used in astronomical/astrological observations and celestial navigation; and the relationship between astrology, the sciences, and the Christian, Islamic, and pagan philosophies of the medieval period. The students are offered BA tracks of study. My favorite is called *Astrology and the New Sciences*. It includes topics such as chaos theory and fractal mathematics, applying whole systems theory and holography to astrology, relativity and the unified field theory and its relationship to astrology, and the basics of quantum theory and its potential relationship to astrology.

Kepler's application for degree authorization to the state of Washington stresses a cross-disciplinary liberal arts curriculum that weaves astrology into history, math, and science courses. These materials and their Web site ([www.kepler.edu](http://www.kepler.edu)) hint at a broader agenda: to legitimize astrology. Promotional materials on the Web clearly state

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APPROVES ASTROLOGY SCHOOL  
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Robert Siegel, host of NPR's *All Things Considered*, Joyce Jensen stated her belief the accreditation does lend credibility to astrology. When Siegel asked how she thought it would do this, Jensen focused on the vocation, not the science: "Because, you know, we've gone through the same process that every other school has gone through. So we've proven our ability to provide a program where people can find employment." For Jensen the popular perception of astrology as a legitimate vocation trumps the question of scientific credibility.

The nationwide accreditation of the institute takes astrology out of the realm

of evening workshops at the local high school and "entertainment" horoscopes. In practical terms, as Fraknoi fears, the recognition elevates the subject to the same level as any other program at any other college or university. Accreditation will open the doors to student financial aid and grants paid for by federal tax dollars. It will also professionalize a lucrative business where, according to Jensen, astrologers charge clients between \$150 and \$300 per hour. By seeking the stamp of approval for the teaching of a vocation, the Astrology Institute has deftly shifted the question away from the qualifications of astrology to the qualifications of the astrologer.

*Kevin Christopher is Public Relations Director for CSICOP.*

of Astrologers, Witch Doctors, and Soothsayers. To the contrary, Kepler is accredited by the Higher Education Coordinating Board of the state of Washington. Thus, this board used the power of the law to make Kepler the peer of the University of Washington."

Hardly anyone would claim that the HEC Board's actions makes Kepler College the peer of the University of Washington. Many institutions in the state are authorized by the HEC Board, and their perceived quality covers a broad spectrum. While Washington state's "authorization" may appear to endorse astrology, the HEC Board points out that authorization is independent of accreditation. In correspondence between the HEC Board and Kepler College, the HEC Board clearly requires Kepler College to not use the term "accredited." Any implication of accreditation is grounds for the HEC Board to repeal authorization. Kepler College therefore walks a fine line when its Web site reads, "Astrology Regains Academic Standing."

So what does Washington state mean by *authorization*? According to Karen Oelschlager, an administrative assistant at the Higher Education Coordinating Board, all educational institutions must meet minimum administrative requirements such as showing guidelines for administration and governance and having clear documentation spelling out program requirements, faculty qualifications, and admission requirements. In addition, the institution must provide academic support resources, financial resources, and catalogs that provide full disclosure of programs, policies and procedures to potential students.

Says Oelschlager: "The decision to authorize an institution or deny an institution for authorization must be based solely on whether the Revised Code of Washington (RCW) and Washington Administrative Code (WAC) requirements have been met by an institution. Authorization by the Higher Educational Coordinating Board means that a degree-granting institution can operate within

*ASTROLOGY IN SEATTLE  
from page 5*

this agenda with comments such as "Kepler College will provide an academic setting for accurate and objective research projects by those who are well-versed in astrology, countering less-than-accurate and biased research conclusions from other less informed academicians."

Washington's authorization of degree programs in astrology gives Kepler College an air of legitimacy that Kepler will use to expand the prominence of astrology. Kepler's Web site states, "Kepler College will provide a broader acceptance for the use of astrology in a wide range of businesses and professions. Kepler College will provide an honorable place for astrology in society now that standards are defined, just as psychology, chiropractic, naturopathic, naturopathic healthcare, and acupuncture have gained respect." Kepler administrators believe that their new status can garner additional funding. "Kepler College will provide the higher education setting necessary to receive government and private grant money for research and scholarships."

Kepler's masters program offers a

degree in counseling. The Web site states, "This program focuses on the accepted theory and practice in psychological and philosophical counseling and advising and how astrology can be used as an integral component of any counseling practice. This study is designed as comparable to a Master's in Social Work with an emphasis in Counseling." Does this imply that a graduate from Kepler College can set up a private counseling practice? The state of Washington did not consider this aspect of Kepler's degree program or its implications in their Letter of Authorization.

Newberg laments that there are many critics of Kepler College. John Silber, chancellor of Boston University wrote an op-ed piece for the *Boston Globe*, "Silliness under Seattle Stars" (May 16, 2001), strongly criticizing Washington for authorizing Kepler's degree programs. "The simple existence of Kepler College is worth little comment," wrote Silber. "Where there are humans, there will be folly, and institutions to advance it. But Kepler College claims that it is 'the only college of astrology in the Western Hemisphere authorized to issue BA and MA degrees.' This authorization does not come from the National Association

the state. Authorization is not an endorsement by the Higher Education Coordinating Board of an institution, a program offered by the institution, or the contents of a program. Potential students and employers determine the 'value' of a degree program offered by any institution."

This past summer marked the first anniversary of Kepler College, whose authorization is up for renewal on March 9, 2002. Supporters are hopeful that the establishment of a college that hands out diplomas in astrology will usher in a new millennium of broader acceptance of astrology while the skeptics are fuming. Only the stars can predict how Kepler's future will play out.

*Mark G. Kuzyk is a professor and Associate Chair of physics at Washington State University.*

## Was the 'Rare Earth' Hypothesis Influenced by a Creationist?

The idea that complex life may have evolved only as a result of a series of exceedingly rare events on Earth, and its corollary—that advanced life may well be rare in the universe—gained new credence and respectability with publication last year of the book *Rare Earth: Why Complex Life Is Uncommon in the Universe*. The book, by two University of Washington scientists, Peter D. Ward, a paleontologist, and Donald Brownlee, an astronomer, is an extensive argument for the Rare Earth hypothesis, and it has gained considerable scientific and popular attention.

(*Rare Earth* was summarized in the SI July/August 2000 New Books column and reviewed in the November/December 2000 issue.)

Now David Darling, an astronomer who is a critic of the Rare Earth hypothesis, has revealed that one of the strongest influences on the authors, a young University of Washington astronomer who they acknowledge in their preface "changed many of our

views about planets and habitable zones," has a hidden, Earth-is-unique agenda motivated by strong "intelligent design" religious views.

"The idea that there's something very special about our planet has always been essential to those who maintain that Earth and Man are of divine origin," notes Darling, in a newly published book about astrobiology, the term now gaining currency for the study of life in the universe.

"... Surprisingly, at the dawn of the twenty-first century," says Darling, "religious influence is once again being brought to bear on the question of whether or not the Earth is somehow special. Without many people realizing it, debate in astrobiology is being actively manipulated by deeply held theological beliefs."

Darling's revelations come in a chapter "Rare Earths and Hidden Agendas" in *Life Everywhere: The Maverick Science of Astrobiology* (Basic Books/Perseus, 2001). Darling bills his book as "a report from the frontline of astrobiological research," and he shares the view of many scientists that a rush of recent discoveries has brought about a "surge in scientific optimism about the prospects for alien life."

In his chapter on the Ward and Brownlee book, Darling acknowledges that it has enlivened debate about exobiology within the scientific community—he describes the scientific reaction as mixed—while being embraced by the religious right as vindication of their belief in the special nature of the Earth.

Darling begins with a point-by-point scientific critique of the Rare Earth hypothesis. The hypothesis essentially says that for life to evolve and survive beyond the microbial stage a very special combination of factors must prevail (such as presence of a large moon to stabilize the planet's orbit, a Jupiter-size planet to sweep up killer asteroids, the occurrence of plate tectonics, and a sun with high

"metallicity") and that these other factors are both rare in themselves and absolutely indispensable to complex life. Darling examines each in turn and concludes that the hypothesis is based on circular reasoning and that the proponents have fallen into the trap of going out of their way to find reasons why Earth is special.

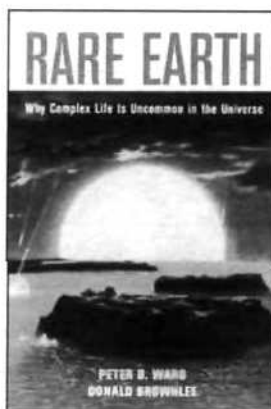
"The Rare Earth theory is neither hypothesis nor prediction, but a description of how life arose on Earth," says Darling. He says Ward and Brownlee "actually pick and choose the factors that best suit their case."

"What matters is not whether there's anything unusual about the Earth; there's going to be something idiosyncratic about every planet in space," says Darling. "What matters is whether any of Earth's circumstances are not only unusual but also essential for complex life. So far we've seen nothing to suggest there is."

"The more you think of it," says Darling, "the more it seems there's something odd about the Rare Earth hypothesis. At a time when many of our scientific indicators suggest, if anything, that life of every description, from the most primitive to the most complex, may be widespread, along comes this curious rebuttal."

Darling says Ward and Brownlee have been heavily influenced by a young University of Washington astronomer, Guillermo Gonzalez, whom they acknowledge in their preface. "More than anyone," Darling says, "he's [Gonzalez's] been instrumental in tying the various strains of the Rare Earth argument together and energetically promoting the thesis across a broad front."

"Although he personally may not be well known, his writings and opinions have been widely disseminated in publications ranging from *The Wall Street Journal* to *Scientific American*. More to the point, he's played an important role in influencing Ward and Brownlee."



"I mentioned that I have a stack of articles by Gonzalez," writes Darling. "In fact I have two stacks." By happenstance, Darling came across a copy of *Connections*, a quarterly newsletter published by Reasons to Believe, Inc., of Pasadena, California, whose mission is "to communicate the uniquely factual basis for belief in the Bible."

"The first article in this particular issue—Volume 1, Number 4, 1999—was Live Here or Nowhere, by Hugh Ross (the president of Reasons to Believe and a well-known creationist scientist) and a certain Guillermo Gonzalez," says Darling. He checked and confirmed that "this was indeed Gonzalez the astronomer and chief Rare Earth campaigner."

That Ross-Gonzalez article concludes: "The fact that the Sun's location is fine-tuned to permit the possibility of life—and even more precisely fine-tuned to keep the location fixed in that unique spot where life is possible—powerfully suggests divine design."

In contrast, Darling notes, Gonzalez's articles in the scientific literature arguing the uniqueness of Earth contain no mention of divine intervention.

"A little more research," Darling writes, "reveals that Gonzalez has been living something of a double life, producing standard scientific output on the one hand and, more or less simultaneously, penning other articles on similar topics in which the same conclusions are presented solely for the purpose of supporting the design argument."

In fact, Gonzalez is a regular contributor to Reasons to Believe pamphlets. In a 1997 piece, he concluded: "The personal involvement of a supernatural Creator seems scientifically reasonable to me." A 1998 article ends this way: "Scientists are left to wonder how Earth came to exist and persist for so long in the zone where life is possible. The impression of design could hardly be more distinct."

Darling notes that scientists' religious views ordinarily are irrelevant. "It isn't unusual for professional scientists to hold strong religious beliefs. Most of the time, it isn't relevant or, frankly, anyone's

business. But in the case of Gonzalez it matters because his underlying conviction has led him to play a very significant role in raising the prominence of the Rare Earth debate."

Darling assumed that Ward and Brownlee must be aware of their colleague Gonzalez's deep theological convictions. But when he asked Ward about this eight months after their book's publication, he found otherwise.

"That is news to me. I have never seen or even heard that Gonzalez does this. . . . Are you sure you have the right Gonzalez?" Ward responded to Darling. Darling assured Ward there was no doubt.

"I think I need an explanation," Ward told Gonzalez in forwarding the e-mail exchange about this between Darling and Ward.

Gonzalez responded this way to Ward (as quoted in Darling's book):

Regarding his [Darling's] statement about my "secret agenda" as a design advocate, it is not such a secret, as my writing on the design issue is rather public and widely distributed. I recently received a grant from the John Templeton Foundation to study habitability from a design perspective—several people in the department know about it. I have not been more open about my pro-design views here at the UW because of the open hostility to such views among the faculty. But I will not apologize for admitting that my theistic theological views motivate my science and vice-versa.

"So here is a curious situation of a scientist actively seeking evidence that extraterrestrial life is rare to shore up a belief in divine design," Darling writes. "And doing it, moreover, without the knowledge of many of his peers, who are nevertheless being strongly influenced by work that is intrinsically biased."

—Kendrick Frazier

*Kendrick Frazier is editor of the SKEPTICAL INQUIRER. Before that he was editor, and earth sciences editor, of Science News.*



Michel de Nostredame ("Nostradamus")

## Bogus Nostradamus Prophecies Circulate Following Terrorism

Within days of the September 11, 2001, attack on the World Trade Centers in New York City, a flurry of e-mails circulated the Internet claiming that the attack had been foreseen by the French astrologer Nostradamus. A dozen or so quatrains were proffered; some were entirely fictional, others were partly embellished actual verse, but not one truly foretold the tragedy.

Such stories are not new, of course: After nearly every national tragedy, prognosticators claim to have predicted the events. Psychics come out of the woodwork with stories of premonitions of doom, or clutching predictions they wrote ahead of time.

Meanwhile, those who believe in prophecy sift through reams of vague writings and quatrains of writers like Edgar Cayce and Nostradamus, trying to breathe new life into stale words. This is perhaps part of a psychological need to participate in the outpouring of emotions or to seem important.

The following is a typical example of the e-mailed prophecies:

Two steel birds will fall from the sky  
on the Metropolis.  
The sky will burn at forty-five  
degrees latitude.  
Fire approaches the great new city.



Immediately a huge, scattered flame leaps up.  
 Within months, rivers will flow with blood.  
 The undead will roam the earth for little time.

Much was made of the second line, as New York City (the putative Metropolis), lies at about forty degrees north latitude—though not forty-five. New York, despite its appellation, is hardly a “great new city,” and is in fact one of the oldest cities in America.

This piece is a hybrid of actual Nostradamus verse and fiction, though the author was sloppy and even a glimmer of skepticism betrays this as a fraud. Not only does it lack the usual quatrain form, but the bit about the “two steel birds” is particularly strange, as steel wasn’t in wide use until nearly 300 years after Nostradamus died. Another quatrain read:

In the city of God there will be a great thunder.  
 Two brothers torn apart by Chaos while the fortress endures.  
 The great leader will succumb,  
 The third big war will begin when the big city is burning.

—Nostradamus 1654

Given the fact that Nostradamus died in 1566, eighty-eight years before the quatrain was supposedly written, it seems a remarkable piece indeed.

This verse was actually published several years ago on the Web page of a student at a Canadian university as part of an essay on how easily important-sounding prophecy can be created using vague imagery. It is ironic that what began as an essentially skeptical, anti-prophecy piece became (intentionally or otherwise) circulated as the real thing.

A similar experiment was reported in the May/June 2001 issue of the *SKEPTICAL INQUIRER*, “The Antinoüs Prophecies,” in which author Clifford Pickover created nonsensical poems and presented them as recently discovered prophecies. Many people created elaborate, real-world interpretations of the fictional lines. Pickover termed the prophecies “verbal ink blots” which rely on modern readers to easily interpret vague descriptions.

As with all such predictions, they only come “true” after the fact as people reinterpret phrases based on what happened.

The Nostradamus prophecies were only one of many rumors and bits of misinformation that circulated following the attacks. For more information, see CSICOP’s Hoaxwatch page at [www.csicop.org/hoaxwatch](http://www.csicop.org/hoaxwatch) or the urban legends reference page at [www.snopes.com](http://www.snopes.com).

—Benjamin Radford

*Benjamin Radford wrote about Nostradamus’s failed 1999 prophecies in the May/June 2000 issue of SI, and has written on Internet hoaxes and urban legends.*

## Hardly a Prayer on ABC’s ‘Downtown’

On May 31, 2000, I was flown to New York by Caron Shapiro, a producer for ABC-TV’s *20/20* newsmagazine who was preparing a report about medical studies that support the healing power of distant prayer—even with patients unaware that they were being prayed for. Michael Guillen, the network’s science editor (and a 1997 James Randi Educational Foundation “Pegasus Award” recipient for his “indiscriminate promotion of pseudoscience and quackery”), would be the correspondent, and was interviewing some of the participants himself. But Shapiro wanted to interview me personally.

When we were done more than an hour later, before Shapiro treated me to dinner, she told me that my open-minded-yet-skeptical comments would serve as a “focal point” (or words to that effect) tying the elements of the piece together. When I asked how she could be so certain that I wouldn’t be chopped down to about thirty seconds, as is typically the case with skeptics on such programs, she told me that she was also the story’s editor, and that Guillen would essentially be following her script.

Well, would you believe *twenty* seconds (plus twenty-five seconds of Guillen attempting to summarize my views)? I could hardly believe it—when the story

finally aired August 13, 2001, on the *20/20* stepchild called *Downtown*—but in hindsight the clues had been there. Shapiro’s report had been sitting for a year, first tentatively scheduled for last fall on the more prestigious *20/20* with Barbara Walters. When I last inquired of Shapiro on May 23 of this year, she reassured me that the piece was not being reedited and sensationalized. From her e-mail: “Relax, it’s [still] mine.” But within two weeks she left ABC (I suspect she was one of the many producers let go this spring as a cost-cutting measure).

More foreshadowing: The *Good Morning America* promos on air date were unsettlingly uncritical. As the story began that night, someone other than Shapiro was credited as editor. Guillen immediately referred to the prayer-advocating researchers as “skeptical scientists.” And, as the program progressed, if anyone was serving as a “focal point,” it was paranormalist author Dr. Deepak Chopra, who even conducted a “stare experiment” with Guillen, demonstrating how Chopra’s concentrated bursts of silent prayer, from a distant room, had a calming effect on Guillen’s nervous system.

More than eight minutes into the ten-minute transcendental lovefest, enter the lone assassin. They didn’t use special effects to perch me on a grassy knoll, but they did use the least open-minded sound bite that Shapiro had evoked from me (about “junk science”), followed several seconds later by my comment on “chance alone.” And how persuasive was my glorious appearance? Immediately thereafter, Chopra did acknowledge, “At the moment I would agree that some of these studies are tentative [and] that we should be a little cautious in the way we interpret the results. . . .” But at the show’s conclusion, a viewer poll was running nine to one in favor of the healing power of distant prayer.

—Gary P. Posner, M.D.

*Gary Posner, contributing editor to The Scientific Review of Alternative Medicine and a CSICOP consultant, has posted his prayer-related articles at <http://members.aol.com/garypos/prayer.html>.*

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Chandra Ann Levy

## 'Psychic Flies' Feed on Levy Disappearance

As the search for missing Washington, D.C., former intern Chandra Levy enters its fifth month, the evidence trail is quickly fading. A case that drew so much media frenzy was certain to draw the flies, and sure enough the parade of people proffering tips on Levy's whereabouts include alleged psychics, seers, and attention-seekers.

Most police departments investigate all tips from all sources, including alleged psychics. A tip is a tip, and just like any other information, the vast majority of them will be wrong but the few that might turn up important information cannot be ignored. When psychics turn out to be right it is because they either guessed correctly, gave very vague information open to later interpretation ("retrofitting"), used information already available through normal means, or made so many different guesses that some had to be right.

A survey published in the *SKEPTICAL INQUIRER* (Vol. 17, Number 2, Winter 1993) by Jane Sweat and Mark Durm found that, among police departments of the fifty largest U.S. cities, nearly two-thirds had never used psychics. Those that had said that none had provided any information more useful than from other

sources, and many were unhappy with the alleged psychics' involvement. Said an Austin, Texas, police department spokesman: "Information received has been voluntary, unreliable, and useless to our investigation."

In the Levy case, the most prolific tips come from psychics. The D.C. police detectives receive about fifty to eighty tips each day, resulting in thousands each month. In an interview with the *Washington Post*, Executive Assistant Chief Terrance Gainer said, "The psychic ones, frankly, I don't think we give much credence to. I don't mean to start a war with all the psychics, but they haven't proven very useful." In fact, Gainer said that many of the leads the psychics offered contradicted known information. "You got 100 different psychics, and they've got 100 different places. They've got her in a cave. Some have her in Nevada. Some have her in water. How can all these psychic radars be all over the country? Who's right?" Gainer has a point: if all these psychics really have the powers they claim, why do they contradict not only the available evidence but each other?

Tipsters claimed that Levy was hidden in a mansion; being held hostage by a boxer; stuffed in a California storage locker; buried at a military base in Fort Lee, Virginia; drowned in the Potomac river, and thousands of other places. At least one person contacted the police claiming that Levy had been abducted by extraterrestrial aliens.

Even well-known psychic Sylvia Browne offered an opinion from "the other side." In an interview with Paula Zahn of the Fox News Channel, Browne said that Levy's body was located near "some trees in a marshy area . . . but this girl is not alive." When Zahn asked how she knew that, Browne rasped, "Because I'm a psychic." (Browne's "vision," by the way, is a typical "safe" psychic response: If a body is buried, the chances are good that trees and/or water are somewhere near—especially given the wooded geography of the Northeast where Levy disappeared.)

On September 4, 2001, State Rep. Dorothy Pelote from Georgia joined the din of psychic predictions. During the House's daily devotional message, she claimed that the ghost of Levy had communicated with her. "I want you to know I can prophesy," she announced to her fellow lawmakers. "I can communicate with the dead. The last person who visited me was [Chandra Levy]. . . . She really didn't say anything. I saw her. When I saw her, she was lying in a ditch and her eyes was [*sic*] closed. She was in a wooded area in a ditch."

There have also been many instances of psychics contacting the families of missing children and offering their services—for a fee of several hundred dollars or more. The parents are usually so desperate for any information that they willingly pay, even if they are skeptical.

Jodi Himebaugh, the father of a boy missing since 1991, said that no psychic asked him for money. He believes instead many were involved because they sought some sort of spiritual validation. After his son disappeared, he said, the psychics started coming around "like flies on horse manure."

Even those psychics who do not exploit the bereaved for monetary gain are still hurting instead of helping the situation. Aside from falsely raising the family's hopes, psychic tipsters waste valuable police time and resources following up on the bogus information they provide. Each hour a detective or police officer wastes chasing dead ends is an hour that could be used trying to find the missing person. And time is especially critical in missing person cases.

Ivana DiNova of a missing children center in Tampa, Florida, said that "When the information they give families doesn't pan out, the family is literally devastated again. I feel deep down in my heart they should be . . . held responsible for what they tell families. They should have some group monitor them."

—Benjamin Radford

Benjamin Radford is Managing Editor of the *SKEPTICAL INQUIRER*.

## Nothing But Trouble in Miss Cleo's Tarot Cards

Miss Cleo—the new juggernaut of psychic hotline telemarketing—has been embroiled in lawsuits garnering national attention. During the past year, television in the United States has been glutted with ads featuring Miss Cleo, who prognosticates in an exotic Jamaican lilt for an off-screen voice viewers might assume is a caller. Waving her jewelled hand over a tarot spread, she amazes the off-screen voice with her insights into love and money.

Apparently the tarot cards never gave Miss Cleo any warnings of lawsuits or stool pigeons. The tarot hotline company's troubles began on November 1, 2000, when Pennsylvania Attorney General Mike Fisher filed a lawsuit against Access Resource Services, Inc., the outermost layer of corporate identity for the tarot hotline. The lawsuit was precipitated by 125 consumer complaints about misleading direct mail solicitations from Miss Cleo which promised thirty "free" minutes of psychic talk time. According to the November 1, 2000, press release issued by the Pennsylvania attorney general's press office, customers who called the 800 number expecting the half hour of free phone time were bilked by four methods: 1) callers placed on hold were falsely promised that they wouldn't be charged for the time they waited to be connected to a psychic reader; 2) callers were connected to a pay-per-call line without their knowledge; 3) callers were falsely promised that they were entitled to free gifts and free phone time with a psychic; and 4) callers were directed to a 900 number for a "free" reading, but when they actually called that number they were informed that if they hung up they would be billed for the call—including the "free" reading. One former Pittsburgh, Pennsylvania, resident told the attorney general's office that she was charged for more than \$700 worth

of "Psychic Network" calls she claims she never made.

A July 26, 2001, CNN story announced that the attorney general of the state of Missouri, Jeremiah Nixon, filed two suits against Access Resource Services, Inc. and its registered agents, American Information Services, Inc. of Miami, Florida, and Lexis-Nexis Corporate Services of Dover, Delaware. According to one suit, filed in the St. Louis circuit court, the three corporate defendants were accused of ninety-four

violations of Missouri's "Telemarketing No-Call List" law. The law allows consumers to register themselves on a list barring telemarketers who operate in the state from calling them.

An August 8, 2001, Associated Press story by Paul Sloca reported that Access Resource Services, Inc., agreed to pay \$75,000 in fines and will obtain a copy of the state's no-call list of 800,000 numbers as its settlement with the State of Missouri. The other Missouri lawsuit, filed in Jefferson County, and accusing the defendants of falsely advertising a free three minutes, is still pending.

On August 1, 2001, Mark Austin, reporter for KSAT-TV in San Antonio, Texas, interviewed a former employee of the Miss Cleo hotline who wished to remain anonymous. According to this

former call-taker, "She's [Miss Cleo] just an actress. She doesn't even read cards. 16153 is her extension, if you call. You won't get through to her. You'll get another reader." The woman alleges that she was trained on methods of getting callers to stay on the line beyond the three minutes offered for free and glean information useful to badger them into calling back: "We'd get a bonus for every piece of information they'd get, and by the time we got all of this information out of them, the three free minutes was up, and then you'd go on to your reading."

All news stories published so far have been content to cite Access Resource Services, a Delaware corporation based in Fort Lauderdale, Florida, as the corporation that owns and operates the Miss Cleo enterprise. Thanks to Florida's freedom of information laws, I have researched Miss Cleo and found a tangled web of companies. The main hive of activity is lodged on the tenth floor of an office building in Fort Lauderdale. The registered agent of Access Resource Services, Inc. is a corporation called American Information Services, Inc., based in Miami. According to its online privacy statement, the Web sites operated by the company include the following: [mindandspiritclub.com](http://mindandspiritclub.com), [cleoreading.com](http://cleoreading.com), [tarotsecrets.com](http://tarotsecrets.com), [tarotsecret.com](http://tarotsecret.com), [cleoprediction.com](http://cleoprediction.com), [cleopredictions.com](http://cleopredictions.com), [myfreereading.com](http://myfreereading.com), [cleocontest.com](http://cleocontest.com), [meetcleo.com](http://meetcleo.com), [cleospirit.com](http://cleospirit.com), [visitleo.com](http://visitleo.com), [mindandspiritpin.com](http://mindandspiritpin.com), [mindandspiritmember.com](http://mindandspiritmember.com), [misscleo.com](http://misscleo.com), [cleotalk.com](http://cleotalk.com), [cleotarot.com](http://cleotarot.com), [cleotarotcards.com](http://cleotarotcards.com), [famouscleo.com](http://famouscleo.com), [mrscleo.com](http://mrscleo.com), [mycleo.com](http://mycleo.com), [mymisscleo.com](http://mymisscleo.com), [cleoenergy.com](http://cleoenergy.com), [cleomembers.com](http://cleomembers.com), [cleoreadings.com](http://cleoreadings.com), [cleopsychic.com](http://cleopsychic.com), [freecleo.com](http://freecleo.com), [cleofanclub.com](http://cleofanclub.com), and [cleotarotcards.com](http://cleotarotcards.com).

Anyone who feels they have been bilked by Miss Cleo is urged to contact your state's attorney general. Contact information can found at [www.naag.org](http://www.naag.org).

—Kevin Christopher □

*This is Elizabeth Loftus's acceptance speech upon receiving the William James Fellow Award of the American Psychological Society on June 14, 2001. We also publish the award citation. Loftus is professor of psychology at the University of Washington and a CSICOP Fellow.—EDITOR*

# When Scientific Evidence Is the Enemy

ELIZABETH LOFTUS

Receiving this honor, the William James Fellow Award for scientific achievement, could not have come at a more meaningful or ironic time in my life. It has made me think about the purpose of awards: what we give them for, what qualities of the recipient or of his or her work we admire. And it has made me think about the purpose of science, that ideally dispassionate, empirical investigation of a particular set of questions.

For more than a decade, as I'm sure many of you know, I have been pursued by the enemies I created by virtue of my research on memory and my efforts to discredit recovered-memory therapy, which has done so much harm to indi-



Elizabeth Loftus

viduals and families. The public thinks this epidemic is over. But many families have never recovered, and many promulgators and victims of the recovered-memory movement remain angry and vengeful. For so many years, I have tried to understand their position, sympathize with the emotionally disturbed young women whom I regard as victims of misguided or misinformed therapists, and find common ground.

Now I realize that for these people, there may be little in the way of common ground. I am their enemy—scientific evidence is their enemy—and I will not be able to persuade them otherwise, not with all the good data and good intentions in the world. This was

## Award Citation

Elizabeth Loftus is an example of the rare scientist who is instrumental both in advancing a scientific discipline and in using that discipline to make critical contributions to society.

Beginning in the mid-1970s, following acclaimed basic research on the workings of semantic memory, she waded into relatively uncharted waters, investigating the critical issues of how and under what circumstances complex memories change, often quite dramatically, over time. Her innovative yet highly rigorous research on this topic brought her renewed praise in the scientific community. At the same time however, she realized the fundamental applications of her and related findings to the legal system, particularly in understanding the circumstances under which a sincere eyewitness may have misidentified an innocent defendant. It is not hyperbole to say that in response to her ingenious laboratory work and her ubiquitous public presence, both the quality of basic memory research and the fairness of the criminal justice system have advanced substantially.

Over the past fifteen years, Dr. Loftus's attention has turned to a related but considerably more controversial issue, that of the validity of "recovered memories" of childhood abuse. As a result of her pioneering scientific work as well as her activity within the legal system, society is gradually coming to realize that such memories, compelling though they may seem when related by a witness, are often a product of recent reconstructive memory processes rather than of past objective reality. In bringing to light these facts of memory, Dr. Loftus has joined the ranks of other scientists, past and present, who have had the courage, inspiration, and inner strength to weather the widespread scorn and oppression that unfortunately but inevitably accompanies clear and compelling scientific data that have the effrontery to fly in the face of dearly held beliefs.

a terribly difficult realization for me. The research findings for which I am being honored now generated a level of hostility and opposition I could never have foreseen. People wrote threatening letters, warning me that my reputation and even my safety were in jeopardy if I continued along these lines. At some universities, armed guards were provided to accompany me during speeches. People misinterpreted my writings and put words in my mouth that I had never spoken. People filed ethical complaints and threatened lawsuits of organizations that invited me to speak. People spread defamatory falsehoods in writings, in newspapers, on the Internet.

As I stand here, the happy recipient of an award that honors me for my research, I continue to be the target of efforts to censor my ideas. I am gagged at the moment and may not give you

any details. But to me, that itself is the problem. Who, after all, benefits from my silence? Who benefits from keeping such investigations in the dark? My inquisitors. The only people who operate in the dark are thieves, assassins, and cowards. Those of us who value the first amendment and open scientific inquiry must bring these efforts to suppress freedom of speech into the light, and tonight I vow to you that when my own situation is resolved, that is precisely what I'm going to do.

In this we can learn from the recent experience of Scott Lilienfeld. Scott wrote a paper on the collision between politics and science that followed in the wake of the Rind et al. affair. The article was accepted for publication, but, mysteriously, later rejected, unless Scott gutted it of all political relevance. Psychological scientists—many of whom are members of APS—launched

a campaign to ensure publication of Scott's article. They told the story to the *Chronicle of Higher Education* and to *Science*. They wrote letters, individually and collectively, arguing for the preservation of peer review and the importance of keeping politics out of the publication process. Organizational officials grumbled about how inappropriate it was to go public, to argue by e-mail, to air an internal conflict to the media. They wanted everyone to shut up and let the appeals process take its course. Was that so Scott's paper could have been quietly suppressed? The scientists did not shut up, and Scott's paper will be published this year, along with commentary and debate, just as it should be.

I am honored to receive this award. I accept it on behalf of the ideals and goals of science that we all hold so dear, and which we must now redouble our efforts to defend. □



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## Ernest Hemingway and Jane

Chris Coover, writing on "A Hemingway Discovery" in *Christie's* magazine (May/June 2000), reported on a recent find of Hemingway manuscripts, letters, and book galleys in a trunk stored by Jane Kendall Mason, an American socialite who had been one of the many women with whom Hemingway had romantic romps. After Hemingway lost interest in Jane, he used her as a model for the character of Margot in one of his most famous stories, "The Short Happy Life of Francis Macomber."

The trunk contained twenty-three letters from "Papa" to Jane, and a handwritten first draft of the short story in which Jane appears. In an act of cruelty, Hemingway had sent the draft to Jane before its final version appeared in the September 1936 issue of *Cosmopolitan*. She would, of course, have at once recognized herself as Margot, the adulterous wife who shoots her husband on a safari in Africa. The trunk also contained an unfinished short story by Jane, with Hemingway's revisions, titled "A High Windless Night in Jamaica."

My second excuse for writing about

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*Martin Gardner's latest book, Martin Gardner's Favorite Poetic Parodies, was published in October by Prometheus Books. The most recent collection of his SKEPTICAL INQUIRER columns (and other material) is Did Adam and Eve Have Navels? (W.W. Norton, 2000).*

Jane is the little-known fact (which only recently came to light), that in her elderly years she became convinced she was possessed by demons, and actually underwent an exorcism by Eileen Garrett, a well-known New York City medium. Jane had become a Spiritualist and medium, producing thousands of pages of automatic writing by a hand she believed was being guided by discarnates. I will tell the wild story of her failed exorcism, but first an account of her flamboyant, frustrated life. For its details I rely mostly on "To Love and Love Not," a remarkable article that ran in the July 1999 issue of *Vanity Fair* by Jane's granddaughter Alane Salierno Mason, a book editor at W.W. Norton.<sup>1</sup>

Jane and Hemingway first met on an ocean liner in 1931. He was thirty-two and married to Pauline, his second wife. Jane was twenty-two and married to Grant Mason, a wealthy American who worked in Cuba as an executive for Pan American Airways. They lived near Havana in a large villa where Jane, an aspiring sculptor, had a third-floor studio.

An adopted daughter of Maryland multimillionaire Lyman Kendall, Jane was often in the news as a prominent society woman of extraordinary beauty. An ad for Pond's Cream described her as "clean cut as a cameo in her Boticelli beauty of pale gold hair and wide set eyes like purple pansies." Tall and athletic, Jane rode horses, fished, hunted in Africa, played the piano and harp, ran a

shop in Havana to sell Cuban art, spoke three languages, and gave fabulous parties featuring pigeons dyed different colors and fresh flowers sewed to tablecloths. Among her many famous friends of later years were Dorothy Parker, Robert Benchley, Archibald MacLeish, and Clare Boothe Luce.

In 1932 Hemingway, leaving Pauline at their home in Key West, spent two months in Havana where he and Jane fished for marlin and became better acquainted. He once boasted that Jane had climbed through his hotel bedroom transom to get in bed with him.

A car accident injured Jane's back. While she was recuperating from an operation in a Manhattan hospital, her husband sent her gifts from Havana which, much to the hospital staff's annoyance, included a tiny green monkey and two white mice named Samson and Delilah.

Jane further damaged her spine in a suicide effort by jumping from a low balcony. Hemingway, whose ego was immense, said to friends that she had tried to kill herself over unrequited love for him. He told John Dos Passos that Jane had literally "fallen" for him! In one of his letters he referred to her husband as a "twirp."

Jane had numerous love affairs, one with a big game hunter named Dick Cooper. On an African safari with Cooper she managed to kill several lions and tigers and the foal of a rare (and



endangered) white zebra. The zebra's skin was sent to England to become a rocking horse for her two adopted sons. Jane later wrote a play, never produced, called *Safari*. It was about a woman named April who wanted to marry a South African army captain but hesitated because it might damage her social standing back home.

In Manhattan Jane was psychoanalyzed by Dr. Lawrence Kubie, a prominent Freudian. He said she was the only patient he ever had who he couldn't help. Dr. Kubie wrote an article about Jane and Hemingway which he sent to the *Saturday Review*. MacLeish persuaded the magazine not to print it because it libeled Hemingway by intimating what everybody who knew him surmised: that "Hem" (as friends called him) suffered from deep doubts about his manhood—doubts that explained his mania for such macho interests as boxing, bull fighting, hunting, fishing, boozing, warring, and womanizing.

Hemingway frequently turned against former friends and sadistically bashed them in books and letters. His volume of Paris memoirs, *A Moveable Feast*, contains cruel recollections of F. Scott Fitzgerald, Gertrude Stein, Ford Madox Ford, and others. This also happened to Jane. In a letter to MacLeish, Hemingway calls her a "bitch," adding that he would like to give her a burst of gunfire. He told one of his biographers that Jane was the "worst bitch" he had known at the time, and that her sole virtue was an eagerness to get laid.

After divorcing Grant, Jane married John Hamilton, a Republican bigwig. The marriage didn't last long. Following a torrid affair with Paul Palmer, a *Reader's Digest* editor, she married George Abell, European bureau chief for Time-Life, and a popular columnist. Divorced again, she married her fourth and final husband, Arnold Gingrich, founder and editor of *Esquire* and *Coronet*. Hemingway was flabbergasted when he learned of this marriage. "I can't get over it," he said. "I can't believe she married that little 't---'."

In three of his works Hemingway based an unpleasant character on Jane. She is Helène Bradley in *To Have and To*

*Have Not*. Gingrich, then a Scribner's editor, recognized Jane as the model for Helène, and believed many passages were libelous. Hemingway was furious when Gingrich insisted he remove the passages. Jane is also Dorothy, a stupid, spoiled, over-sexed young woman in Hemingway's play *The Fifth Column*. And she is Margot in Hemingway's familiar story "The Short Happy Life of Francis Macomber."



In that story Margot is unhappily married to Francis, a wealthy but wimpy American whom she dominates. They hate each other. On an African safari, Macomber flees in terror from a wounded lion, making him a coward in his wife's eyes. Later, however, he suddenly loses all fear when he shoots at a buffalo charging toward him. Margot takes aim at the same beast but instead shoots her husband in the head. The story has a trick ending, like Frank Stockton's "Lady or the Tiger?" It is not clear whether Margot, sensing how her husband has changed, did or did not intend to kill him.

Here is what Hemingway said about the story in a letter:

I wrote "The Short Happy Life of Francis Macomber" about a woman I was mixed up with one time who had a husband who was a coward. I knew

he was a coward by direct observation and by local knowledge. But I invented the story in Africa instead of where it happened.

Though cleverly written, I consider this one of Hemingway's worst stories. Macomber's instant change from a coward to a brave man is much too improbable. I see the tale as just another one of Hemingway's not-so-subtle efforts to imply that he, The Great White Hunter, was a man without fear.

Hemingway died in 1961 at age sixty-two. He had become physically ill, severely depressed, and paranoid. Shock therapy was administered at the Mayo Clinic. I was walking east one afternoon along 42nd Street in Manhattan, alongside the public library, when I passed Hemingway walking slowly the other way. He was staring straight ahead with a look of fear in his eyes. Soon after that, as everyone knows, his loudly trumpeted bravery deserted him. He put a double-barreled shotgun in his mouth and blew out his brains.

Jane's belief that she was possessed by spirits had its origin in a session with a Ouija board when it began to glide under her fingers and spell out messages from the Great Beyond. When she began talking as if her mind and tongue were taken over by a demon, her husband Gingrich sought the help of Robert Laidlaw, M.D., who headed the Psychiatric Department of Roosevelt Hospital. He in turn contacted his friend Eileen Garrett, who often assisted him in treating persons who fancied themselves possessed. Garrett was a famous Irish-born trance medium living in Manhattan. She had founded the Parapsychological Foundation in New York City, and *Tomorrow*, a magazine about the paranormal that she edited with the help of Martin Ebon, her managing editor, and who wrote all her editorials.

Jane's exorcism was witnessed and audiotaped by Ebon, then administrative secretary of the Parapsychological Foundation of which Garrett was president. A refugee at age twenty-one from Hitler's Germany, Ebon became a prolific writer of more than forty entertaining books about

paranormal topics, world communism and the Soviets, and numerous biographies of Soviet leaders. We have become good friends in spite of our opposing views about psi phenomena.

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Ebon describes Jane's exorcism in "Ghost Against Ghost," the first chapter of his 1974 book *The Devil's Bride: Exorcism, Past and Present*. However, names and details were altered, and it was not until 1999 that Ebon, speaking at the Parapsychological Foundation, disclosed that the person possessed was none other than Hemingway's former companion, Jane.

Ebon calls her Victoria Camden. Her husband, Arnold Gingrich, is called Walter Camden. They are said to be living in a lavish town house on Manhattan's upper east side. Present during the exorcism, aside from Jane, Garrett, and Ebon, were Gingrich and Dr. Laidlaw. Ebon was there to observe and audiotape.

For several years Jane had believed that her mind and body were repeatedly taken over by a variety of different spirits. One in particular claimed to be a Salem witch who had escaped detection and hanging. Ebon calls her Ruth, though actually she was nameless. She would fling Jane's body across a room and onto the floor. On one occasion, Jane said, the witch almost drowned her in the bathtub.

Garrett went into her usual trance, and was first taken over by her major control Uvani, a soldier who lived centuries ago in India. Uvani was then replaced by Abdul Lotif, a twelfth-century Arab physician, another of Garrett's controls. While in trance, Eileen's voice always changed markedly

to the accents of the discarnate being speaking through her.

As Ebon describes the scene, Jane began writhing with convulsions as she felt herself invaded by the witch. She fell

to the floor, sobbing, then crawled over the rug to rest her head on Garrett's knees. Gingrich and Dr. Laidlaw watched in stunned silence.

And then an incredible dialog took place. For the first time in the history of channeling, Ebon believes, a ghost argued with another ghost. Abdul did his best to persuade the witch to leave Jane alone. The witch refused.

At the end of the session Abdul lifted Garrett's hand until it rested on Jane's head. "And now, you," Abdul said, "must go and let this child reside in his own world. She must be restored to herself, and to herself alone."

Garrett groaned and shuddered as she came out of her trance. "What's happened?" she asked. Trance mediums almost never recall, or pretend not to recall, what they say while under a control. Jane slowly became herself. "I guess we all need a stiff drink," Eileen said.

While the group was having drinks and sandwiches, they discussed a male poltergeist that Jane thought had been making tapping sounds in the house.

Garrett assured Jane that the poltergeist was "a friendly spirit who likes the house, he likes you, but I've asked him to go away; to please go away in the name of God and leave everybody at peace until they are strong. I see him as brash, cheerful, nonchalant, good-natured but rough."

"Not too good-natured," said Jane.

Asked how she felt about her possession

by the witch, Ebon quotes Jane as saying:

I've suffered terribly with this, but I've never been afraid. Now that is the peculiar part. I don't understand it. You ride a horse that's thrown you and you may say to yourself, "I'm not afraid of this horse," but deep down in your soul, you are afraid but I was not afraid of this. I had some misgiving about coming back here tonight. I admit that. But still and all, when [Ruth] takes hold of me, as she did before, I'm still not really afraid of her, though I know she can hurt me.

The exorcism was only partially successful. Ebon tells me that for several months after the exorcism Jane was less persecuted by the witch. Dr. Laidlaw told him that Jane's later trances seemed less genuine, more like theatrical performances to gain attention. Her case was complicated by severe alcoholism that distorted and colored her thinking.

I tried to obtain Ebon's audiotape of the exorcism, but it seems to have been lost in the archives of the Parapsychological Foundation.

Jane always fancied herself a talented poet and novelist. Gingrich published some of her poems in *Esquire* under the pseudonym of Proctor Farwell and James Matheson. After dying of cancer in 1980—her husband died of cancer four years earlier—she left several unpublished manuscripts including a memoir of her childhood, a novel titled *Dear Meg*, and notes for a book about her experiences with demon possession. "Jane probably never really wanted to marry Ernest Hemingway," Mason writes. "She wanted to be Ernest Hemingway."

On Jane's tombstone, alongside Gingrich's, are words she herself wrote: "Talents too many, not enough of any." Mason closes the article about her grandmother by writing: "In the end she would not be remembered for her own talents, but for Hemingway's."

### Note

1. Alane Mason is the adopted daughter of one of Jane's two adopted sons. It was she who discovered the trunk mentioned in my opening paragraph. The draft of "The Short Happy Life . . ." was sold by Christie's to a private collector, his name not disclosed, for the highest price ever paid for the manuscript of a short story by an American author. □



# John Edward: Hustling the Bereaved

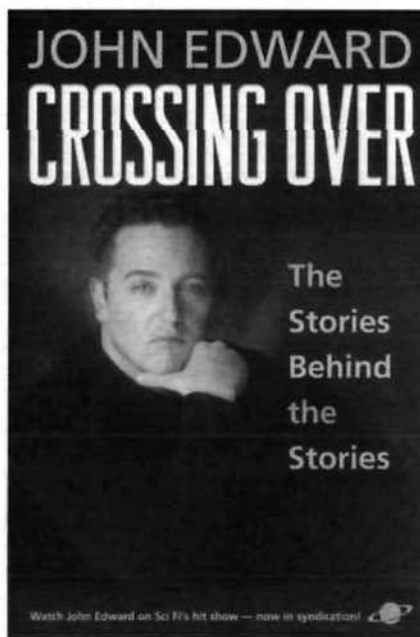
Superstar “psychic medium” John Edward is a stand-up guy. Unlike the spiritualists of yore, who typically plied their trade in dark-room séances, Edward and his ilk often perform before live audiences and even under the glare of TV lights. Indeed, Edward (a pseudonym: he was born John MaGee Jr.) has his own popular show on the SciFi channel called *Crossing Over*, which has gone into national syndication (Barrett 2001; Mui 2001). I was asked by television newsmagazine *Dateline NBC* to study Edward’s act: was he really talking to the dead?

## The Old Spiritualism

Today’s spiritualism traces its roots to 1848 and the schoolgirl antics of the Fox sisters, Maggie and Katie. They seemed to communicate with the ghost of a murdered peddler by means of mysterious rapping sounds. Four decades later the foxy sisters confessed how they had produced the noises by trickery (Nickell 1994), but meanwhile others discovered they too could be “mediums” (those who supposedly communicate with the dead).

The “spiritualism” craze spread across the United States, Europe, and beyond. In darkened séance rooms, lecture halls, and theaters, various “spirit” phenomena occurred. The Davenport Brothers conjured up spirit entities to play musical instruments while the two mediums were, apparently, securely tied in a special “spirit cabinet.” Unfortunately the Davenporters were exposed many times, once

by a local printer. He visited their spook show and volunteered as part of an audience committee to help secure the two mediums. He took that opportunity to secretly place some printer’s ink on the neck of a violin, and after the séance one of the duo had his shoulder smeared with the black substance (Nickell 1999).



In Boston, while photographer William H. Mumler was recycling some glass photographic plates, he accidentally obtained faint images of previous sitters. He soon adapted the technique to producing “spirit extras” in photographs of his clients. But Mumler’s scam was revealed when some of his ethereal entities were recognized as living Boston residents (Nickell 1994).

The great magician Harry Houdini (1874–1926) crusaded against phony spiritualists, seeking out elderly mediums who taught him the tricks of the trade. For example, while sitters touched hands around the séance table, mediums had clever ways of gaining the use of one hand. (One method was to slowly move the hands close together so that the fingers of one could be substituted for those of the other.) This allowed the production of special effects, such as causing a tin trumpet to appear to be levitating. Houdini gave public demonstrations of the deceptions. “Do Spirits Return?” asked one of his posters. “Houdini Says No—and Proves It” (Gibson 1977, 157).

Continuing the tradition, I have investigated various mediums, sometimes attending séances undercover and once obtaining police warrants against a fraudulent medium from the notorious Camp Chesterfield spiritualist center in Indiana (Nickell 1998). The camp is the subject of the book *The Psychic Mafia*, written by a former medium who recanted and revealed the tricks of floating trumpets (with disembodied voices), ghostly apparitions, materializing “apports,” and other fake phenomena (Keene 1976)—some of which I have also witnessed firsthand.

## Mental Mediumship

The new breed of spiritualists—like Edward, James Van Praagh, Rosemary

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*Joe Nickell is author of many books on the paranormal, including Entities: Angels, Spirits, Demons, and Other Alien Beings.*

Altea, Sylvia Browne, and George Anderson—avoid the physical approach with its risks of exposure and possible criminal charges. Instead they opt for the comparatively safe “mental mediumship” which involves the purported use of psychic ability to obtain messages from the spirit realm.

This is not a new approach, since mediums have long done readings for their credulous clients. In the early days they exhibited “the classic form of trance mediumship, as practiced by shamans and oracles,” giving spoken “spirit messages” that ranged all the way from personal (and sometimes strikingly accurate) trivia to hours-long public trance-lectures on subjects of the deepest philosophical and religious import” (McHargue 1972).

Some mediums produced “automatic” or “trance” or “spirit” writing, which the entities supposedly dictated to the medium or produced by guiding his or her hand. Such writings could be in flowery language indeed, as in this excerpt from one spirit writing in my collection:

Oh my Brother—I am so glad to be able to come here with you and hold sweet communion for it has been a long time since I have controlled this medium but I remember how well used I had become to her magnetism[,] but we will soon get accustomed to her again and then renew the pleasant times we used to have. I want to assure you that we are all here with you this afternoon[—]Father[,] Mother[,] little Alice[—]and so glad to find it so well with you and we hope and feel dear Brother that you have seen the darkest part of life and that times are not with you now as they have been . . . .

and so on in this talkative fashion.

### “Cold Reading”

By contrast, today’s spirits—whom John Edward and his fellow mediums supposedly contact—seem to have poor memories and difficulty communicating. For example, in one of his on-air séances (on *Larry King Live*, June 19, 1998), Edward said: “I feel like there’s a J- or G-sounding name attached to this.” He also perceived “Linda or Lindy or Leslie; who’s this L name?” Again, he got a “Maggie or

Margie, or some M-G-sounding name,” and yet again heard from “either Ellen or Helen, or Eleanore—it’s like an Ellen-sounding name.” Gone is the clear-speaking eloquence of yore; the dead now seem to mumble.

The spirits also seemingly communicate to Edward et al. as if they were engaging in pantomime. As Edward said of one alleged spirit communicant, in a *Dateline* session: “He’s pointing to his head; something had to affect the mind or the head, from what he’s showing me.” No longer, apparently, can the dead speak in flowing Victorian sentences, but instead are reduced to gestures, as if playing a game of charades.

One suspects, of course, that it is not the imagined spirits who have changed but rather the approach today’s mediums have chosen to employ. It is, indeed, a shrewd technique known as “cold reading”—so named because the subject walks in “cold”; that is, the medium lacks advance information about the person (Gresham 1953). It is an artful method of gleaning information from the sitter, then feeding it back as mystical revelation.

The “psychic” can obtain clues by observing dress and body language (noting expressions that indicate when one is on or off track), asking questions (which if correct will appear as “hits” but otherwise will seem innocent queries), and inviting the subject to interpret the vague statements offered. For example, nearly anyone can respond to the mention of a common object (like a ring or watch) with a personal recollection that can seem to transform the mention into a hit. (For more on cold reading see Gresham 1953; Hyman 1977; Nickell 2000.)

It should not be surprising that Edward is skilled at cold reading, an old fortunetelling technique. His mother was a “psychic junkie” who threw fortunetelling “house parties,” one of the alleged clairvoyants advising the then-fifteen-year-old that he had “wonderful psychic abilities.” He began doing card readings for friends and family, then progressed to psychic fairs where he soon learned that names and other “validating information” sometimes applied to the

dead rather than the living. Eventually he changed his billing from “psychic” to “psychic medium” (Edward 1999). The revised approach set him on the road to stardom. In addition to his TV show, he now commands hundreds of dollars for a private reading and is booked two years in advance (Mui 2001).

### “Hot Reading”

Although cold reading is the main technique of the new spiritualists, they can also employ “hot” reading on occasion. Houdini (1924) exposed many of these information-gathering techniques including using planted microphones to listen in on clients as they gathered in the mediums’ anterooms—a technique Houdini himself used to impress visitors with his “telepathy” (Gibson 1976, 13). Reformed medium M. Lamar Keene’s *The Psychic Mafia* (1976) describes such methods as conducting advance research on clients, sharing other mediums’ files (what Keene terms “mediumistic espionage”), noting casual remarks made in conversation before a reading, and so on.

An article in *Time* magazine suggested John Edward may have used just such chicanery. One subject, a marketing manager named Michael O’Neill had received apparent messages from his dead grandfather but, when his segment aired, he noted that it had been improved through editing. According to *Time*’s Leon Jaroff (2001):

Now suspicious, O’Neill recalled that while the audience was waiting to be seated, Edward’s aides were scurrying about, striking up conversations and getting people to fill out cards with their name, family tree and other facts. Once inside the auditorium, where each family was directed to preassigned seats, more than an hour passed before show time while “technical difficulties” backstage were corrected.

Edward has a policy of not responding to criticism, but the executive producer of *Crossing Over* insists: “No information is given to John Edward about the members of the audience with whom he talks. There is no eavesdropping on gallery conversations, and there are no ‘tricks’ to feed information to John.” He labeled the *Time* article “a

mix of erroneous observations and baseless theories" (Nordlander 2001).

## Very Hot

Be that as it may, on *Dateline* Edward was actually caught in an attempt to pass off previously gained knowledge as spirit revelation. During the session he said of the spirits, "They're telling me to acknowledge Anthony," and when the cameraman signaled that was his name, Edward seemed surprised, asking "That's you? Really?" He further queried: "Had you not seen Dad before he passed? Had you either been away or been distanced?" Later, playing the taped segment for me, *Dateline* reporter John Hockenberry challenged me with Edward's apparent hit: "He got Anthony. That's pretty good." I agreed but added, "We've seen mediums who mill about before sessions and greet people and chat with them and pick up things."

Indeed, it turned out that that is just what Edward had done. Hours before the group reading, Tony had been the cameraman on another Edward shoot (recording him at his hobby, ballroom dancing). Significantly, the two men had chatted and Edward had obtained useful bits of information that he afterward pretended had come from the spirits. In a follow-up interview Hockenberry revealed the fact and grilled an evasive Edward:

HOCKENBERRY: So were you aware that his dad had died before you did his reading?

Mr. EDWARD: I think he—I think earlier in the—in the day, he had said something.

HOCKENBERRY: It makes me feel like, you know, that that's fairly significant. I mean, you knew that he had a dead relative and you knew it was the dad.

Mr. EDWARD: OK.

HOCKENBERRY: So that's not some energy coming through, that's something you knew going in. You knew his name was Tony and you knew that his dad had died and you knew that he was in the room, right? That gets you . . .

Mr. EDWARD: That's a whole lot of thinking you got me doing, then. Like I said, I react to what's coming

through, what I see, hear and feel. I interpret what I'm seeing hearing and feeling, and I define it. He raised his hand, it made sense for him. Great.

HOCKENBERRY: But a cynic would look at that and go, 'Hey,' you know, 'He knows it's the cameraman, he knows it's DATELINE. You know, wouldn't that be impressive if he can get the cameraman to cry?'

Mr. EDWARD: Absolutely not. Absolutely not. Not at all.

But try to weasel out of it as he might, Edward had obviously been caught cheating: pretending that information he had gleaned earlier had just been revealed by spirits and feigning surprise that it applied to Tony the cameraman. (And that occurred long before *Time* had suggested that an *Inside Edition* program—February 27, 2001—was probably "the first nationally televised show to take a look at the Edward phenomenon." That honor instead goes to *Dateline NBC*.)

In his new book *Crossing Over*, Edward tries to minimize the *Dateline* exposé, and in so doing breaks his own rule of not responding to criticism. He rebukes Hockenberry for "his big Gotcha! moment," adding:

Hockenberry came down on the side of the professional skeptic they used as my foil. He was identified as Joe Nickell, a member of the Committee for the Scientific Investigation of Claims of the Paranormal, which likes to simplify things and call itself CSICOP. He did the usual sound bites: that modern mediums are fast-talkers on fishing expeditions making money on people's grief—"the same old dogs with new tricks," in Hockenberry's words.

Edward claims to ignore any advance information that he may get from those he reads, but concedes, "it's futile to say this to a tough skeptic" (Edward 2001, 242–243).

Edward may have benefitted from actual information on another occasion, while undergoing a "scientific" test of his alleged powers (Schwartz et al. 2001). In video clips shown on *Dateline*, Edward was reading subjects—who were brought into the hotel room where he sat with his back to the door—when he impressed his tester

with an atypical revelation. Edward stated he was "being shown the movie *Pretty in Pink*" and asked if there was "a pink connection." Then he queried, "Are you, like, wearing all pink?" The unidentified man acknowledged that he was. Yet Edward had thought the subject was a woman, and I suspect that erroneous guess was because of the color of his attire; I further suspect Edward *knew* it was pink, that as the man entered the room Edward glimpsed a flash of the color as it was reflected off some shiny surface, such as the glass of a picture frame, the lens of the video camera, etc. I challenge Edward to demonstrate his reputed color-divining ability under suitably controlled conditions that I will set up.

## Inflating "Hits"

In addition to shrewd cold reading and out-and-out cheating, "psychics" and "mediums" can also boost their apparent accuracy in other ways. They get something of a free ride from the tendency of credulous folk to count the apparent hits and ignore the misses. In the case of Edward, my analysis of 125 statements or pseudostatements (i.e., questions) he made on a *Larry King Live* program (June 19, 1998) showed that he was incorrect about as often as he was right and that his hits were mostly weak ones. (For example he mentioned "an older female" with "an M-sounding name," either an aunt or grandmother, he stated, and the caller supplied "Mavis" without identifying the relationship; see Nickell 1998.)

Another session—for an episode of *Crossing Over* attended by a reporter for *The New York Times Magazine*, Chris Ballard (2001)—had Edward "hitting well below 50 percent for the day." Indeed, he twice spent "upward of 20 minutes stuck on one person, shooting blanks but not accepting the negative responses." This is a common technique: persisting in an attempt to redeem error, cajoling or even browbeating a sitter (as Sylvia Browne often does), or at least making the incorrect responses seem the person's fault. "Do not *not* honor him!" Edward exclaimed at one point, then (according to Ballard) "staring down the bewildered man."

When the taped episode actually aired, the two lengthy failed readings had been edited out, along with secondary offerings. What remained were two of the best readings of the show (Ballard 2001). This seems to confirm the allegation in the *Time* article that episodes were edited to make Edward seem more accurate, even reportedly splicing in clips of one sitter nodding yes "after statements with which he remembers disagreeing" (Jaroff 2001).

Edited or not, sessions involving a group offer increased chances for success. By tossing out a statement and indicating a section of the audience rather than an individual, the performing "medium" makes it many times more likely that someone will "acknowledge" it as a "hit." Sometimes multiple audience members will acknowledge an offering, whereupon the performer typically narrows the choice down to a single person and builds on the success. Edward uses just such a technique (Ballard 2001).

Still another ploy used by Edward and his fellow "psychic mediums" is to suggest that people who cannot acknowledge a hit may find a connection later. "Write this down," an insistent Edward sometimes says, or in some other way suggests the person study the apparent miss. He may become even more insistent, the positive reinforcement diverting attention from the failure and giving the person an opportunity to find some adaptable meaning later (Nickell 1998).

### Debunking Versus Investigation

Some skeptics believe the way to counter Edward and his ilk is to reproduce his effect, to demonstrate the cold-reading technique to radio and TV audiences. Of course that approach is unconvincing unless one actually poses as a medium and then—after seemingly making contact with subjects' dead loved ones—reveals the deception. Although audiences typically fall for the trick (witness *Inside Edition's* use of it), I deliberately avoid this approach for a variety of reasons, largely because of ethical concerns. I rather agree with Houdini (1924, xi) who had done spiritualistic stunts during his early career:

At the time I appreciated the fact that I surprised my clients, but while aware of the fact that I was *deceiving* them I did not see or understand the seriousness of trifling with such sacred sentimentality and the baneful result which inevitably followed. To me it was a lark. I was a mystifier and as such my ambition was being gratified and my love for a mild sensation satisfied. After delving deep I realized the seriousness of it all. As I advanced to riper years of experience I was brought to a realization of the seriousness of trifling with the hallowed reverence which the average human being bestows on the departed, and when I personally became afflicted with similar grief I was chagrined that I should ever have been guilty of such frivolity and for the first time realized that it bordered on crime.

Of course tricking people in order to educate them is not the same as deceiving them for crass personal gain, but to toy with their deepest emotions—however briefly and well intentioned—is to cross a line I prefer not to do. Besides, I believe it can be very counterproductive. It may not be the alleged medium but rather the debunker himself who is perceived as dishonest, and he may come across as arrogant, cynical, and manipulative—not heroic as he imagines.

As well, an apparent reproduction of an *effect* does not necessarily mean the *cause* was the same. (For example, I have seen several skeptical demonstrations of "weeping" icons that employed trickery more sophisticated than that used for "real" crying effigies.) Far better, I am convinced, is showing evidence of the actual methods employed, as I did in collaboration with *Dateline NBC*.

Although John Edward was among five "highly skilled mediums" who allegedly fared well on tests of their ability (Schwartz et al. 2001)—experiments critiqued elsewhere in this issue (Wiseman and O'Keeffe, see page 26)—he did not claim validation on *Larry King Live*. When King (2001) asked Edward if he thought there would ever be proof of spirit contact, Edward responded by suggesting proof was unattainable, that only belief matters: "... I think that to prove it is a personal thing. It is like saying, prove God. If you have a belief system and you have faith, then there is nothing really more than that." But this is an

attempt to insulate a position and to evade or shift the burden of proof, which is always on the claimant. As Houdini (1924, 270) emphatically stated, "It is not for us to prove the mediums are dishonest, it is for them to prove that they *are* honest." In my opinion John Edward has already failed that test.

### Acknowledgments

I appreciate the assistance of Tom Flynn who helped me analyze the video clips mentioned in the text and refine the hypothesis that Edward may have glimpsed a reflection. I am also grateful to Tim Binga, Barry Karr, Kevin Christopher, Ben Radford, and Ranjit Sandhu for other assistance.

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## Conspire This!

On most days, the Santa Clara Convention Center, adjacent to the Santa Clara Westin Hotel and the Technology Mart, is abuzz with the schmoozing of high-tech millionaires, former millionaires, and wannabe-millionaires. But for two days of the Memorial Day weekend, it served as the world headquarters to a little-known resistance movement: the forces (such as they were) that had assembled to oppose the machinations of the Illuminati, the New World Order, MK Ultra, and numerous other shadowy organizations, some of which may even exist.

Paranoia was the mantra, and the late-night radio talk show maven Art Bell the high priest. The world in which these people live is a truly frightening place. Mind control assaults us, and chemtrails poison us from above. Supposedly health-giving vaccines are deliberately poisoned, the energy crisis is a sinister fraud, and even microwave ovens are dangerous. Worst of all, some shadowy, sinister group is doing everything for its own selfish gain.

Mark Philips and Cathy O'Brien started the conference with a bang, giving their talks on MK-Ultra Mind Control (see [www.trance-formation.com/](http://www.trance-formation.com/)). Philips told how this type of sinister mind control was first studied, then perfected, by the

Third Reich under the direct orders of Hitler. The Nazis found that it was possible to create robotlike people with super-human powers using a sinister program of early childhood sexual abuse. Not only would these people obey orders unquestioningly, they developed "forty-four times" visual acuity. After the war, ex-Nazi psychiatrists and psychologists came to the U.S. to work for the CIA, where the evil work continued. O'Brien explained that she was one of those unfortunate victims. Her father, who allegedly had abused her since infancy, cooperated with congressman (and future president) Gerald Ford and the governor of Michigan to deliver her up to the MK-Ultra Mind Control group. Her "owner" within this group was a still-prominent U.S. senator. She was controlled on a day-to-day basis by the "harmonics" in the music she was given to listen to, and by TV shows she was made to watch, such as Disney programs and the *Wizard of Oz*, which contained subliminal messages.

She explained that "my sexuality had been enhanced," a statement that did not inspire disbelief. She had allegedly spent years as a robotic sex slave for the conspiracy. Nobody asked her if she had developed forty-four times visual acuity. Mark saved her in 1988, and just in the nick of time, because at age thirty the conspiracy was preparing her for "elimination." Around that age, you see, mind controllees begin to spontaneously recover the "repressed" memories of

their abuse, and so they are pre-programmed for self-destruction. Nothing so dramatic as a cyanide capsule is needed: MK-Ultra programs into its victims a capability to go into "respiratory failure" upon receiving the proper signal. Fortunately, Mark rescued her and whisked her off to safety in Alaska. Apparently Alaska is so far away that even MK-Ultra couldn't find her.

After those exciting talks, William Lyne was a big disappointment. He was supposed to talk about "Tesla's Secret Technologies and Government Suppression," but he rambled on about a lot of things, mostly about himself. He claims to have led an extremely exciting life, encountering government agents at every turn, who were responsible for things happening to him that might otherwise be interpreted as failures, such as losing a job, his wife leaving, or getting booted out of the armed forces. He says he discovered a Soviet spy ring running the career counseling office at the Lackland Air Force base in Texas. One would have expected that a Soviet spy ring would have concentrated on getting information on weapons and codes, but they apparently thought they could do more damage to U.S. interests by misdirecting Air Force enlistees into inappropriate training programs. However, Lyne's brilliant discovery upset General Curtis LeMay, who feared that if word leaked out it could endanger Eisenhower's re-election. This led to

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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).*

Lyne being booted out of the Air Force.

Lyne was the first to find out about the Soviet missiles in Cuba and he warned the CIA, but they didn't tell JFK about it until six months later. He "predicted" the assassination of JFK as soon as he saw the motorcade route in the

for the U.S. corporation's loans from international bankers. (It's odd, I have looked at many stock quotes over the years, but have yet to see my birth certificate listed.) Originally sold for \$630,000, our birth certificates are now worth more than \$1 million each. If you look at your

## Cathy O'Brien claimed to have seen, during her days as a robotic White House sex slave, George Bush do a "lizard projection" using "harmonics."

newspaper the day before. He had met Oswald, who was working for the CIA and was "robotic." Oswald was actually a right-winger and not a Marxist. One thing Lyne did not spell out was whether or not he believes that Oswald actually did kill Kennedy. If so, he must have been the only person there (besides me) who did. As for Tesla, all we learned was that some Nazi U-boats were powered by Tesla devices, a fact confirmed by a man who claimed to have been a Nazi U-boat commander. We also learned that the real reason that Rommel's Afrika Korps went into the desert was not to fight the British, but actually to test a neutron bomb. Apparently to test such a thing requires entire armies and thousands of armored vehicles, rather than just a few key scientists and technicians.

Jordan Maxwell (see [www.bbcoa.com/jordan/](http://www.bbcoa.com/jordan/)) is a jolly sort of fellow who uses simple, folksy arguments to reach startling conclusions. He informed us that we Americans are still living under a system of government and religion that is "Druidic" in origin, and we are still being ruled by England. All of our law is based on maritime admiralty law. Because you were born from the water breaking in your mother's womb, under maritime admiralty law this makes you a maritime "product." We think we are American citizens, but in reality all of us "belong" (literally) to the United States, which is a foreign-owned corporation set up in 1868. When your mother signed your birth certificate, this gave ownership of you to the U.S. corporation. Our birth certificates are traded on the stock exchange, where they serve as collateral

name as it appears on official documents, you will find that it is always in capital letters, just like the letters on a tombstone. This indicates that you are dead, under the law: you belong to them.

There is a way to remedy this, of course, and "repatriate" yourself to become a citizen of "America" instead of a product belonging to the "United States." You can also get your true name back, using both uppercase and lowercase letters. Among the advantages will be that you do not have to pay income taxes, and are no longer subject to the jurisdiction of the courts. Maxwell and his pals can help you to do this, but (as did not come out until the second day) it's going to cost you. His "repatriation" package sells for a mere \$995 (see [www.tbafamily.com/bbcoa/freedom.html](http://www.tbafamily.com/bbcoa/freedom.html)). A "mortgage cancellation" package costs \$1,200, a true bargain considering the size of mortgages here in California. But not all his services are so expensive. Monetary judgments can be set aside for a mere \$125.

Dubious etymology is a specialty of Maxwell's. For example, the Christian worship of God's "son," who is risen, is clearly derived from Roman worship of the "sun," which rises each morning. Son-sun, he repeats, it's obvious. (Can his audience truly be so simplistic to believe that these words would sound the same to speakers of Latin, Greek, or Hebrew?) "Christ" is really "cristo" or "crisco," which means "oil," not anointed. The "Lord," originally spelled "Lard," is simply congealed "crisco." Passover is when the sun "passes over" the equator which marks the beginning of spring. (According to his resume,

Maxwell was an "On-screen Expert and Research Consultant" for the CBS pseudodocumentary series "Ancient Secrets of the Bible." With "expertise" like his, no wonder that program had the real scholars howling!)

The British conspiracist David Icke (pronounced "Ike"), perhaps the best-known of all the speakers, swaggered onto the stage, then proceeded to tell a lot of jokes. Eventually moving onto the serious matters, he explained how all hunger and poverty in the world is caused by the conspirators who keep people miserable to promote dependency on them. Multinational corporations are, of course, the cause of poverty in Africa, and not political instability, lack of education, or poor infrastructure.

The Atlantean-Lemurian civilizations were very advanced. Today's royal bloodlines trace back to them (and indeed much further). The Merovingians, an ancient dynasty, founded Paris, and dug many tunnels and caves under it. One of them was the Pont d'Alma tunnel, where Princess Diana died (although it looks to me suspiciously like an urban traffic underpass of much more recent vintage).

Icke's most amazing claim is that the bloodlines of Europe's royal families, which some claim to trace back to a secret union of Jesus and Mary Magdalene, are in fact derived from extraterrestrial lizards (see [www.davidicke.com/icke/temp/reptconn.html](http://www.davidicke.com/icke/temp/reptconn.html)). As proof of this, you need only look at the prevalence of gargoyles and dragons on all kinds of royal coats of arms. These people can be recognized by their ability to "shape shift" into reptilian form, then back again.

Cathy O'Brien claimed to have seen, during her days as a robotic White House sex slave, George Bush do a "lizard projection" using "harmonics." Icke claims that the Illuminati lizards need to maintain a vast, global network of satanic cults to perform human sacrifice, sexual molestation, and cannibalism. He explains on his Web site that "to hold their human form, these entities need to drink human (mammalian) blood and access the energy it contains to maintain their DNA codes in their 'human' expression. If they don't, they manifest their



reptilian codes and we would all see what they really look like. . . . From what I understand from former 'insiders,' the blood (energy) of babies and small children is the most effective for this, as are blond-haired, blue-eyed people."

William Thomas, who spoke on "Responding to the Chemtrails Threat" (see [www.island.net/~lbnews/](http://www.island.net/~lbnews/)), is the archetype of what a conspiracy theorist is expected to be like. Unlike many of the other speakers his mannerisms are paranoid and intense, his humor wry and unintended. (Maxwell's delivery had been so light that I seriously wondered if his presentation was entirely farce, although the audience surely didn't think that. However, no one will ever question Thomas' sincerity.) He lamented that his two-and-a-half-year pursuit of the chemtrails has "just about taken over my life, just about ruined my life."

Thomas got repeated laughter from the audience when, showing slides of broad, flat jet contrails crossing the skies, he recounted the official explanations he had been given that these are just "normal airline operations." For the benefit of those who cannot tell chemtrails from contrails, he offered the following explanation: contrails are pencil-thin lines that disappear quite soon, usually within one minute: anything else is a chemtrail, which is both sinister and bad for your health. The chemtrail assault upon us was first noted in November 1998, and has been causing sickness ever since. Thomas does not agree with those who say that it's a deliberate attempt by the U.S. government to poison us. Instead, he suspects it is a massive, covert government operation to delay global warming by increasing the amount of sunlight that is reflected back into space. (According to a ten-year study by the French climatologist Olivier Boucher, not only do jet contrails sometimes seed the growth of cirrus clouds that can grow to enormous size, but they appear to *increase* global temperatures by trapping in reradiated heat. See "Air traffic may increase cirrus cloudiness," *Nature* 397:30, 7 January 1999). Unfortunately, the aluminum oxide that is allegedly being sprayed has bad health consequences: the particles

are causing huge colonies all kinds of bad bacteria, molds, fungi, etc. to precipitate down from the upper regions (where they presumably cavort happily unless disturbed, subsisting on nothing but plain air). Thus people are getting sick wherever chemtrails are seen. "Basically, Chicken Little was right."

Dr. Leonard Horowitz is an anti-vaccination activist who spoke on "The Toxic Warfare Against Humanity" (see [www.tetrahedron.org/aboutus.html](http://www.tetrahedron.org/aboutus.html)). He explained how vaccines are deliber-

**Conspiracy apparently cannot thrive without hypochondria—presumably those who feel healthy do not look around for someone to blame for their condition, and those who are genuinely sick realize that nobody conspired to create their illness.**

ately contaminated by the Rockefeller-Windsor-Bush cabal, who not only make money selling the killer vaccines, but also off the medical treatments resulting from the diseases the vaccines create. The Rockefellers have invented the American medical monopoly, the cancer industry, and eugenics. The Rockefellers control the Alfred P. Sloan philanthropic foundation, which has created many viruses, including AIDS. The Rockefellers are trying to slowly poison us to reduce the population, making profits all the way. The recent West Nile Virus outbreak in the U.S. was a hoax, concocted to sell vaccines. Alzheimer's patients are actually suffering from Creutzfeldt-Jakob disease, the human form of Mad Cow disease. The bacteria *E. coli* is being genetically engineered by the CIA to create killer germs. Wherever WASP-directed capitalism goes, there also goes genocide.

Horowitz takes very seriously the "Report from Iron Mountain" with its claims of a secret government plot to perpetuate war. But this "document" is actually a hoax, as its author has confessed: see [www.museumofhoaxes.com/iron.html](http://www.museumofhoaxes.com/iron.html). Unlike many of the other speakers, Horowitz, a "Jew for Jesus," is very religious, his talk interspersed with prayer making him sound much like a revivalist. (Most of the other speakers were quite

hostile toward organized religion, viewing it as part of the conspiracy.) Today, he warns, vaccine-induced diseases are fulfilling the dreadful prophecies from the Book of Revelations.

Surprisingly, it never was decided just who is to blame for the mess we are in. The favorite villains were the Rockefellers, the Rothschilds, the Bilderberger network, the Illuminati, the CIA, and according to at least some of the literature being promoted, the Jews. There are also international bankers, the British

royal family, Jesuits, multinational corporations, and all the speakers' favorite villains, the Republicans, especially George Bush the elder, who is imagined to have secretly been running the country for decades. Of course, if he were really as powerful as all that, it seems he would have at least engineered his own re-election, let alone arrange a better than razor-thin electoral college victory for his son and heir.

"Alternative medicine" seems part and parcel of conspiracy claims, here and elsewhere. The speakers and the literature tables refer endlessly to conspiracies promulgated by organized medicine, and I heard a number of people complain about conditions not recognized by mainstream medicine. Conspiracy apparently cannot thrive without hypochondria—presumably those who feel healthy do not look around for someone to blame for their condition, and those who are genuinely sick realize that nobody conspired to create their illness.

As it happened, the conference facility was being shared with the Northern California Conference of Charismatic Catholics. During the breaks, I could hear some people talking about messages they received from the Lord, while others told of receiving threats from the CIA. The Charismatic conference, by the way, had a much greater attendance. □

# A Critique of Schwartz et al.'s After-Death Communication Studies

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*Studies with mediums by Gary Schwartz and colleagues have been widely reported in the media as scientific proof of life after death. But their experiments did not employ blind judging, used an inappropriate control group, and had insufficient safeguards against sensory leakage.*

RICHARD WISEMAN and CIARAN O'KEEFFE

Schwartz, Russek, Nelson, and Barentsen (2001) recently reported two studies in which mediums appeared to be able to produce accurate information about the deceased under conditions that the authors believed “eliminate the factors of fraud, error, and statistical coincidence.” Their studies were widely reported in the media as scientific proof of life after death (e.g., Matthews 2001; Chapman 2001). This paper describes some of the methodological problems associated with the Schwartz et al. studies and outlines how these problems can be overcome in future research.

Schwartz et al.'s first experiment was funded and filmed by a major U.S. television network (Home Box Office—HBO)

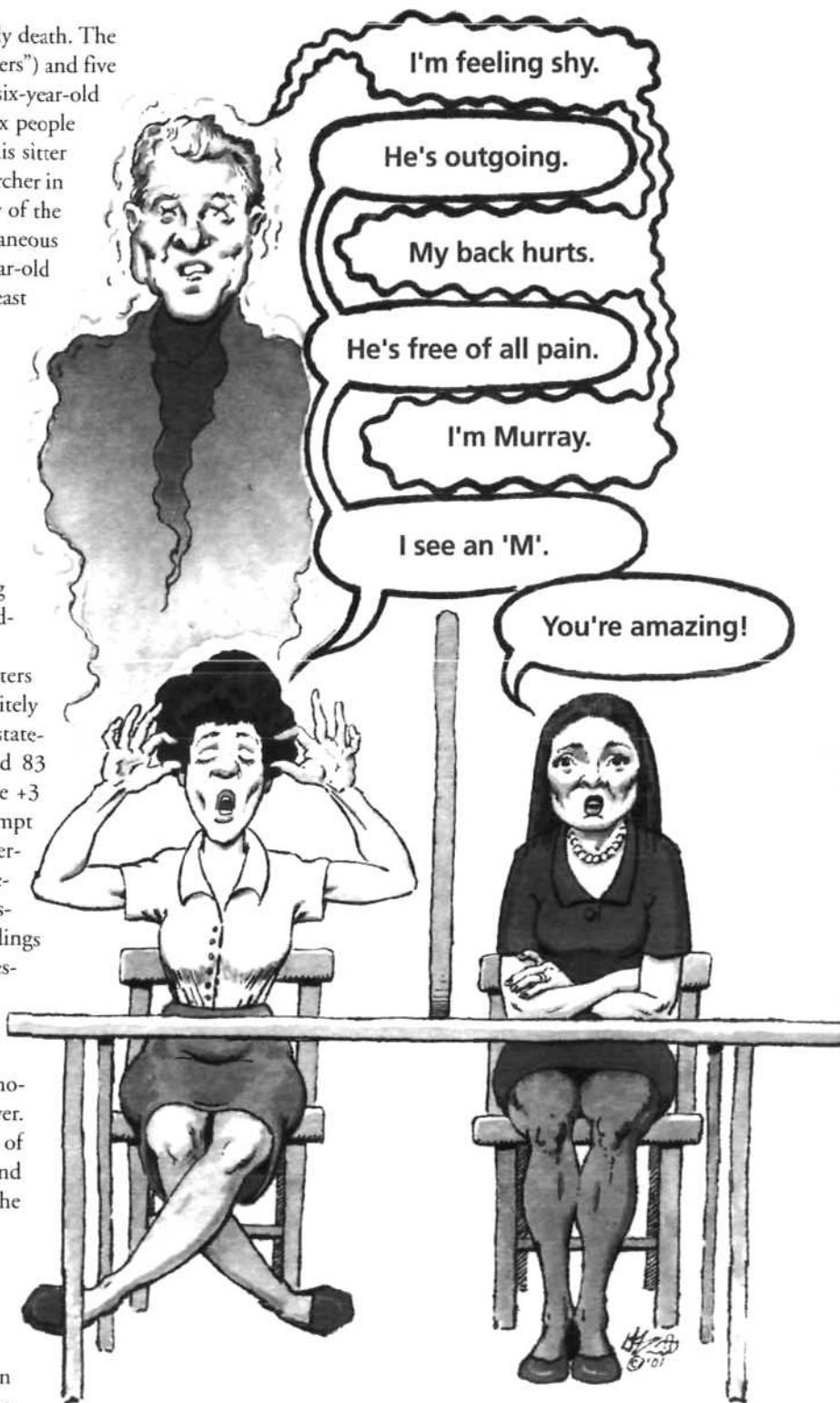
making a documentary about the survival of bodily death. The study involved two participants (referred to as "sitters") and five well-known mediums. The first sitter was a forty-six-year-old woman who had experienced the death of over six people in the last ten years. Schwartz et al. stated that this sitter was recommended to them by a well-known researcher in ADCs (After Death Communication) who "knew of the sitter's case through her research involving spontaneous ADCs." The second sitter was a fifty-four-year-old woman who had also experienced the death of at least six people in the last ten years.

During the experiment, the sitter and medium sat on either side of a large opaque screen. The medium was allowed to "conduct the reading in his or her own way, with the restriction that they could ask only questions requiring a yes or no answer." Each sitter was asked to listen to the reading and respond to the medium's questions by saying the word "yes" or "no" out loud. The first sitter was given a reading by all five mediums; the second sitter received readings from only two of the mediums.

A few months after the experiment, both sitters were asked to assign a number between -3 (definitely an error) to +3 (definitely correct) to each of the statements made by the mediums. The sitters placed 83 percent and 77 percent of the statements into the +3 category. Schwartz et al. also reported their attempt to discover whether "intelligent and motivated persons" could guess the type of information presented by the mediums by chance alone. The investigators selected seventy statements from the readings given to the first sitter and turned them into questions. For example, if the medium had said "your father loved dancing," the question became "Who loved to dance?" Sixty-eight undergraduates were shown these questions, along with a photograph of the sitter, and asked to guess the answer. Schwartz et al. reported that the average number of items guessed correctly was just 36 percent, and argue that the high level of accuracy obtained by the mediums could not be due to chance guessing.

The first sitter was then invited back to the laboratory to take part in a second experiment. In this experiment she received readings from two of the mediums who also participated in the first study. Rather than being separated by an opaque screen, the sitter sat six feet behind the medium. In the first part of these two readings the sitter was instructed to remain completely silent. In the second part she was asked to answer "yes" or "no" to each of the medium's questions. After reviewing the readings, the sitter rated 82 percent of the mediums' statements as being "definitely correct."

The Schwartz et al. studies suffered from severe methodological problems, namely: (1) the potential for judging bias, (2) the use of an inappropriate control group, and (3)



inadequate safeguards against sensory leakage. Each of these problems will be discussed in turn.

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## Judging Bias

During a mediumistic reading the medium usually produces a large number of statements and the sitter has to decide whether these statements accurately describe his/her deceased friends or relatives. It is widely recognized that the sitter's endorsement of such statements cannot be taken as evidence of mediumistic ability, as seemingly accurate readings can be created by a set of psychological stratagems collectively referred to as "cold reading" (Hyman 1977; Rowland 1998). It is therefore vital that any investigation into the possible existence of mediumistic ability controls for the potential effect of these stratagems. Unfortunately, the Schwartz et al. study did not contain such controls, and thus it is possible that the seemingly impressive results could have been due to cold reading.

Schwartz et al. reproduced a small part of one reading in their paper, and this transcript can be used to illustrate how cold reading could account for the outcome of the studies. In the first line of the transcript the medium said, "Now, I don't know if they [the spirits] mean this by age or by generation, but they talk about the younger male that has passed. Does that make sense to you?" The sitter answered "yes." The medium's statement is ambiguous and open to several different interpretations. When the medium mentioned the word "younger" he/she could be talking about a young child, a young man, or even someone who died young (e.g., in their forties). The sitters may be motivated to interpret such statements in such a way as to maximize the degree of correspondence with their deceased friends and relatives if, for example, they had a strong belief in the afterlife, a need to believe that loved ones have survived bodily death, or were eager to please the mediums, investigators, and the HBO film crew.

In addition, the sitters may have endorsed the readings because some statements caused them to selectively remember certain events in their lives. As a hypothetical example, let us imagine that the medium had said, "Your son was an extrovert." This statement may have caused the sitter to selectively recall certain life events (i.e., the times that her son went to parties and was very outgoing), forget other events (e.g., the times that he sat alone and didn't want to be with others), and thus assign a spuriously high accuracy rating to the statement.

Biased interpretation of ambiguous statements and selective remembering can lead to sitters endorsing contradictory statements during a reading. Interestingly, the short transcript reproduced by Schwartz et al. contains an example of exactly this happening:

Medium: . . . your dad speaks about the loss of child. That makes sense?

Sitter: Yes.

Medium: Twice? 'Cause your father says twice.

Sitter: Yes.

Medium: Wait a minute, now he says thrice. He's saying three times. Does that make sense?

Sitter: That's correct.

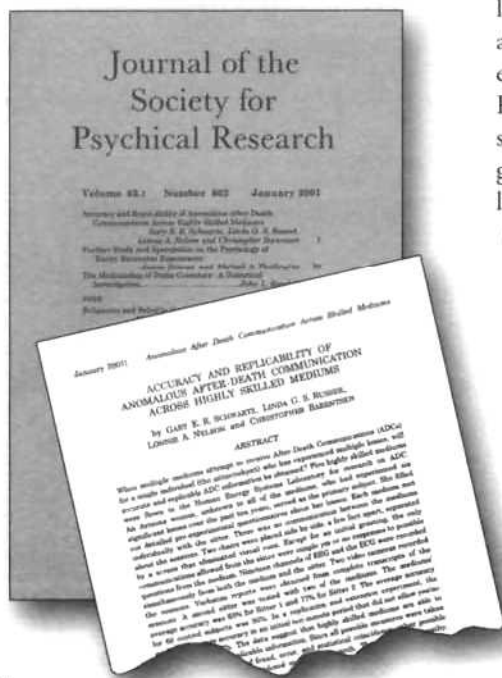
Some of the statements made by the mediums may also have been true of a great many people and thus had a high likelihood of being endorsed by the sitters. For example, in the transcript the medium stated that one of the spirits was a family member, and elsewhere Schwartz et al. stated that the mediums referred to "a little dog playing ball." It is highly probable that many sitters would have endorsed both of these statements.

Research has also revealed that many statements that do not appear especially general can also be true of a surprisingly large number of people. Blackmore (1994) carried out a large-scale survey in which more than 6,000 people were asked to state whether quite specific statements were true of them. More than one third of people endorsed the statement, "I have a scar on my left knee" and more than a quarter answered yes to the statement "Someone in my family is called Jack." In short, the mediums in the Schwartz et al. study may have been accurate, in part, because they simply produced statements that would have been endorsed by many sitters.

Other factors may also increase the likelihood of the sitter endorsing the mediums' statements. Clearly, the more deceased people known to the sitter, the greater chance they will have of being able to find a match for the medium's comments. Both sitters knew a relatively large number of deceased people. Both of them had experienced the death of six loved ones in the last ten years, and the first sitter reported that she believed that the mediums had contacted an additional nine of her deceased friends and relatives. Thus, the sitters' high levels of endorsement may have been due, in part, to them having a large number of deceased friends and relatives.

## Control Group Biases

Schwartz et al. attempted to discover whether the seemingly high accuracy rate obtained by the mediums could have been the result of chance guesswork. However, the method developed by the investigators was inappropriate and fails to address the concerns outlined above. They selected seventy statements from the readings given to the first sitter in the first experiment and turned them into questions. For



example, if the medium had said "your son is very good with his hands," the question became "who was very good with his hands?" These questions were presented to a group of undergraduates, who were asked to guess the answers. Schwartz et al. reported that the average number of items guessed correctly was just 36 percent. However, it is extremely problematic to draw any conclusions from this result due to the huge differences in the tasks given to the mediums and control group. For example, when the medium said, "your son was very good with his hands," the sitter has to decide whether this statement matches the information that she knew about her deceased son. However, as noted above, this matching process may be biased by several factors, including her selective remembering and the biased interpretation of ambiguous statements. For example, the sitter may think back to the times that her son built model airplanes, endorse the statement, and the medium would receive a "hit." However, the control group were presented with a completely different task. They were presented with the question "Who was good with his hands?" and would only receive a "hit" if they guessed that the answer was the sitter's son. They therefore had a significantly reduced likelihood of obtaining a hit than the mediums.

*Conceptually, this is equivalent to testing archery skills by having someone fire an arrow, drawing a target around wherever it lands and calling it a bullseye, and then testing a "control" group of other archers by asking them to hit the same bullseye. Clearly, the control group would not perform as well as the first archer, but the difference in performance would reflect the fact that they were presented with very different tasks, rather than a difference in their archery skills.*

Psychical researchers have developed various methods to overcome the problems associated with "cold reading" when investigating claims of mediumistic ability (see Schouten 1994 for an overview). Most of these methods involve the concept of "blind judging." In a typical experiment, a small number of sitters receive a reading from a medium. The sitters are then asked to evaluate both his or her own reading (often referred to as the "target" reading) and the readings made for other sitters (referred to as "decoy" readings). If the medium is accurate then the ratings assigned to the target readings will be significantly greater than those assigned to the decoy readings. However, it is absolutely vital that the readings are judged "blind"—the sitters should be unaware of whether they are evaluating a "target" or "decoy" reading. This simple safeguard helps overcome all of the problems outlined above. Let us suppose that the medium is not in contact with the spirit world, but instead tends to use cold reading to produce seemingly accurate statements. These techniques will cause the sitters to endorse both the target and decoy readings, and thus produce no evidence for mediumistic ability. If, however, the medium is actually able to communicate with the spirits, the sitters should assign a higher rating to their "target" reading than the "decoy" readings, thus providing

evidence of mediumistic ability.

It is hoped that future tests of mediumistic ability will employ the type of blind judging methods that have been developed, and frequently employed, in past tests of mediumistic ability.

However, blind judging is only one of several methodological safeguards that should be employed when testing mediumistic ability. Well-controlled tests should also obviously prevent the medium from being able to receive information about a sitter through any normal channels of communication. Unfortunately, the measures taken by Schwartz et al. to guard against various forms of potential sensory leakage appear insufficient.

## **Mediums in the Schwartz et al. study may have been accurate, in part, because they simply produced statements that would have been endorsed by many sitters.**

### **Sensory Leakage**

Throughout all of the readings in the first experiment, and the latter part of the readings in the second experiment, the sitter was allowed to answer "yes" or "no" to the medium's questions. These answers would have provided the mediums with two types of information that may have helped them produce more accurate statements in the remainder of the reading. First, it is very likely that the sitter's voice would have given away clues about her gender, age, and socioeconomic group. This information could cause the mediums to produce statements that have a greater likelihood of being endorsed by the sitter. For example, an older sitter is more likely to have experienced the death of their parents than a younger sitter, and certain life events are gender-specific (e.g., being pregnant, having a miscarriage, etc.). Second, the sitters' answers may have also given away other useful clues to the mediums. For example, let us imagine that the medium stated, "I am getting the impression of someone male, is that correct?" If the sitter has recently lost someone very close to her, such as a father or son, then she might answer a tearful "yes." If, however, the deceased male was an uncle that sitter didn't really know very well, then her "yes" might be far less emotional. Again, a skilled medium might be able to unconsciously use this information to produce accurate statements later in the reading. *Any well-controlled test of mediumistic ability should not allow for the sitter to provide verbal feedback to the medium during the reading.*

In the first part of the readings in the second experiment, the sitter was asked not to answer yes or no to any of the medium's statements. However, the experimental set-up still employed insufficient safeguards against potential sensory leakage. The medium sat facing a video camera and the sitter sat six feet behind the medium without any form of screen separating the two of them. As such, the sitter may have

emitted various types of sensory signals, such as cues from her movement, breathing, odor, etc. Parapsychologists have developed elaborate procedures for eliminating potential sensory leakage between participants (e.g., Milton and Wiseman 1997). These safeguards frequently involve placing participants in separate rooms, and often the use of specially constructed sound-attenuated cubicles. Schwartz et al. appeared to have ignored these guidelines and instead allowed the sitter to interact with the medium, and/or simply seated them behind one another in the same room. Neither of these measures represent sufficient safeguards against the potential for sensory leakage.

The investigators also failed to rule out the potential for sensory leakage between the experimenters and mediums. The second sitter in the first experiment is described as being "personally known" to two of the experimenters (Schwartz and Russek). The report also described how, during the experiment, the mediums were allowed to chat with Russek in a courtyard behind the laboratory. Research into the possible existence of mediumistic ability should not allow anyone who knows the sitter to come into contact with the medium. Schwartz allowed such contact, with their only safeguard being that the mediums and Russek were not allowed to talk about matters related to the session. However, a large body of research has shown that there are many ways in which information can be unwittingly communicated, via both verbal and nonverbal means (e.g., Rosenthal and Rubin 1978). As such, the safeguards employed by Schwartz et al. against possible sensory leakage between experimenter and mediums were insufficient.

In short, the Schwartz et al. study did not employ blind judging, employed an inappropriate control group, and had insufficient safeguards against sensory leakage. As such, it is impossible to know the degree to which their findings represent evidence for mediumistic ability. Psychological researchers have worked hard to develop robust methods for testing mediums since the 1930s (see Schouten 1994). It is hoped that future work in this area will build upon the methodological guidelines that have been developed and thus minimize the type of problems discussed here.

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# Magical Thinking in Complementary and Alternative Medicine

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*Homeopathy and other popular therapies demonstrate ancient and universal principles of magical thinking, which some recent research suggests are fundamental to human cognition, even rooted in neurobiology.*

PHILLIPS STEVENS, JR.

**M**any of today's "complementary" or "alternative" systems of healing involve magical beliefs, manifesting ways of thinking based in principles of cosmology and causality that are timeless and absolutely universal. So similar are some of these principles among all human populations that some cognitive scientists have suggested that they are innate to the human species, and this suggestion is being strengthened by current scientific research. Any efforts to correct such thinking should begin with understanding of the nature of the principles involved. When we ask "why people believe weird things" (as has Shermer 1997) we might consider that at least some beliefs derive from a natural propensity to think in certain ways.



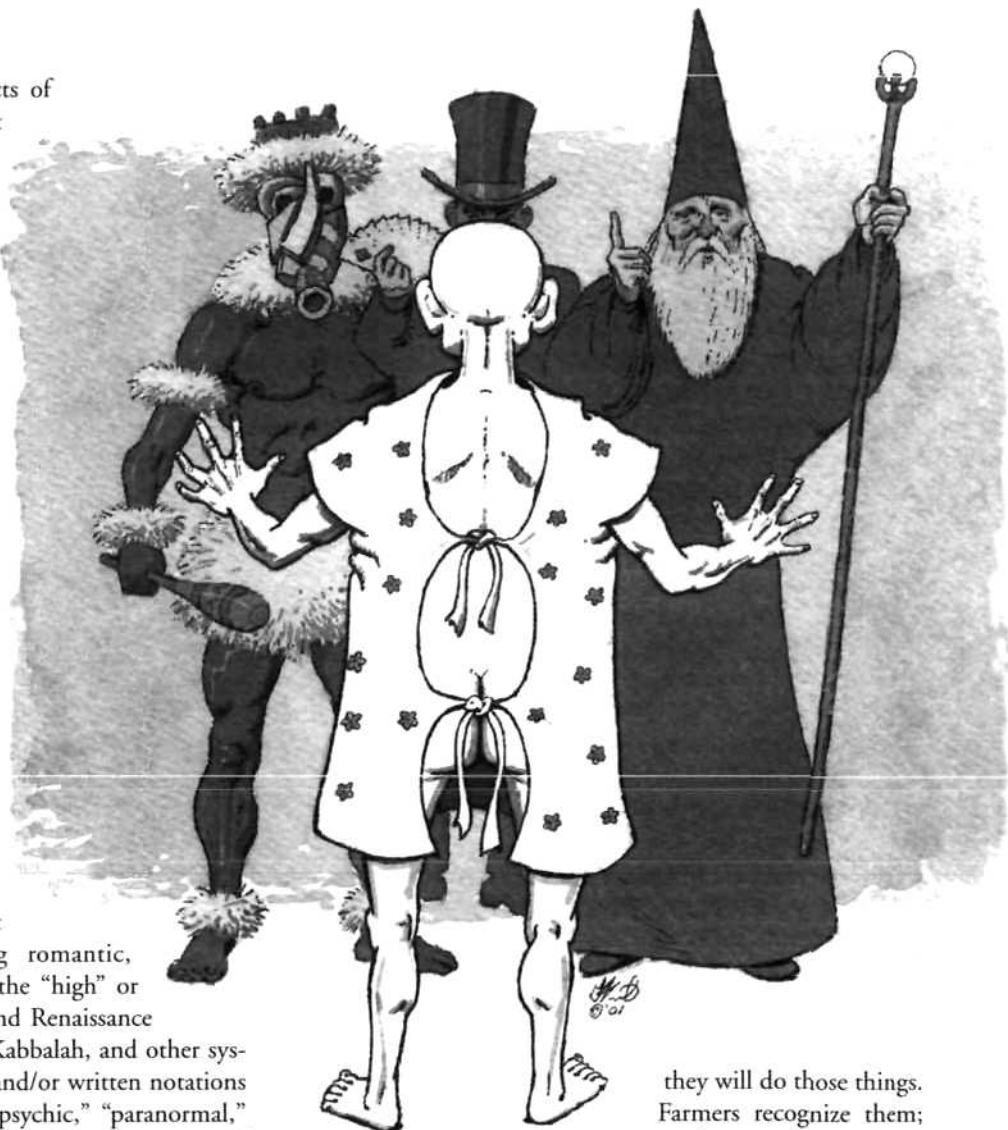
This article considers those aspects of belief that accord with the best anthropological meanings of "magic" and "magical thinking." It defines these terms far more specifically than have others.<sup>1</sup> I will first survey the wide range of popular meanings of *magic*, then elucidate underlying principles involved in the belief system most appropriately labeled "magic." I will identify some popular belief systems that involve magical thinking and indicate some recent scientific studies that suggest that we are dealing with innate principles of cognition.

### Meanings of "Magic"

The terms *magic* and *magical* have a wide range of meanings, both among scholars and the general public. In no significant order, the terms can mean: the tricks and illusions of a stage magician; ability to change form, visibility, or location of something, or the creation of something from nothing; spirit invocation and command; having romantic, awe-inspiring, or wondrous quality; the "high" or "Hermetic" magic of late medieval and Renaissance times, including astrology, alchemy, Kabbalah, and other systems involving complex calculations and/or written notations and formulas; anything "mystical," "psychic," "paranormal," "occult," or "New Age"; some of the beliefs and practices of Wicca and other neo-pagan religions, often spelled "magick"; any of the many meanings of "sorcery" or "witchcraft," or other referents of "black magic"; anything seeming mysterious or miraculous; and the terms can be used as a general reference to supernatural power. I have elaborated on these meanings elsewhere (Stevens 1996a).

Even among scholars there is not general agreement, and any of the above meanings may be evident in different anthropological writings. But there are distinct ways of thinking and corresponding ritual practices that are similar among all peoples in the world and at all stages of recorded history—including prehistory—which most anthropologists, and many other scholars, refer to as *magic*. In this universal sense, as I have indicated in more detail elsewhere (Stevens 1996b), magic operates according to any or all of five basic principles:

1. *Forces*. Most peoples seem to believe in forces in nature that are separate from and operate independently of any spiritual beings and are also separate from those forces identified and measured by science, e.g., gravity, electromagnetism, and the strong and weak nuclear forces. The forces are inherently programmed, apparently since the Creation, to do specific things, either alone or in concert with others, and if left alone



they will do those things. Farmers recognize them; poets have written about them ("The force that through the green fuse drives the flower"—Dylan Thomas, 1934).

2. *Power*. The forces, and everything else, are energized by a mystical power that exists in varying degrees in all things. The power in higher-order things, spiritual beings, and people of high status, like African and Polynesian kings, may be dangerous to ordinary people. Power is transferable, through physical contact, sensory perception, or mere proximity. The idea is exemplified in the biblical concept of divine "glory," as halos over the heads of saints in medieval art, and in contemporary New Age "auras" and "psi energy." It is belief in supernatural power that defines the concept of "sacred," and that distinguishes holy water.

In some belief systems, "forces" and "power" may seem to merge; e.g., in the concept of "vital force" that exists in so many forms: Polynesian and Melanesian *mana*, Iroquois *orenda*, Algonquian *manitou*, Sioux *wakan*, Malay *kramat*, Indian *brahma*, Greek *dynamis*, Chinese *qi*, *ashé* among the Yoruba of West Africa and its Caribbean derivatives (*aché*, *axé*),

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“karma” and “chakras” in Hindu and Buddhist healing systems, the alleged “energies” in Therapeutic Touch and Reiki, etc.; and ideas of flowing streams of power in Earth, like “ley-lines” in Britain and Europe and earth energies addressed in the Chinese geomantic system of *feng shui*.

3. *A coherent, interconnected cosmos.* It is widely believed that everything in the cosmos is actually or potentially interconnected, as if by invisible threads, not only spatially but also temporally—past, present, and future. Further, every thing and every event that has happened, is happening, or will happen

**Words are extremely powerful, as they embody their own meaning, and speech is usually part of the magic act. It is universally believed that spoken words, activated by the life force and the intent of the speaker and borne on his or her breath, carry the power of their own meaning directly to their intended target.**

was pre-programmed into the cosmic system; and after it has happened, it leaves a record of itself in the cosmic program.

4. *Symbols.* Symbols are words, thoughts, things, or actions that not only represent other things or actions but can take on the qualities of the things they represent. The American flag is a good example; if the flag is mistreated it is more than the material that is damaged. If the thing the symbol stands for has power, the symbol will become powerful. Some symbols with power appear to be universal, e.g., eggs, horns, and the color red; most are understandable only in their specific cultural contexts.

Words are extremely powerful, as they embody their own meaning, and speech is usually part of the magic act. It is universally believed that spoken words, activated by the life force and the intent of the speaker and borne on his or her breath, carry the power of their own meaning directly to their intended target. Unspoken thoughts can do the same, although less effectively. Telepathy, telekinesis, and the projection of “psi energy” are thus explained.

5. *Frazer’s principles.* Sir James George Frazer, in his monumental work on religion and kingship, *The Golden Bough*, explained his famous principles of sympathetic magic in most detail in the third edition, 1911–1915. Heir to the eighteenth-century Positivist assumption of “laws” governing nature and society, Frazer said that sympathetic magic was of two types. “Homeopathic” magic works according to the “law of similarity”—things or actions that resemble other things or actions have a causal connection. “Contagious magic” obeys the “law of contact”—things that have been either in physical contact or in spatial or temporal association with other things retain a

connection after they are separated. Frazer is rightly credited for his detailed explication of sympathetic magic and his collection of numerous examples from world ethnology. But ideas of causality based in similarity and contact had been expressed by philosophers since Classical times (e.g., Hippocrates), were integral to the medieval and Renaissance Hermetic systems (e.g., Paracelsus), and had been noted, and dismissed as lazy thinking, by Francis Bacon in his *Novum Organum*, 1608–1620.

Note that spirit beliefs are not involved in the above principles. Many uses of “magic” mean spirit invocation and command, but probably all peoples conceive of spirits as sentient and willful beings who may choose not to respond to human command—as Shakespeare’s Hotspur famously responded to Glendower’s boast that he could “call spirits from the vasty deep,” in *King Henry IV, Part I*.<sup>2</sup> The forces and powers addressed and manipulated in magic are insentient and passively responsive (if the rite is performed correctly). Magic should be distinguished from supplication of a deity, as through prayer; but all scholars recognize that magical principles are intertwined with and complementary to religious ritual.

So, magic involves the transfer of power in nature, or the human effort to manipulate natural forces along the network of cosmic interconnections by symbolic projection of power. Magical principles are evident in intentional magic, in which symbols are consciously used, through principles of similarity or contact, for beneficial or harmful results; in taboo, which is the avoidance of establishing an undesirable magical connection; in the direct use of words to achieve results, as in blessing or curse; in some forms of divination, “reading” answers to questions by tapping into the cosmic program through mechanical or clairvoyant means; in harnessing the power of symbols for personal good fortune or protection, as in talismans and “lucky” charms; etc. Indeed, ideas of “luck” and “jinx” are magical concepts. Most “superstitions” are readily explainable by the principles of magical thinking.

### Homeopathy and Other Magical Belief Systems

Some of the principles of magical beliefs described above are evident in currently popular belief systems. A clear example is homeopathy. Fallacies in homeopathic claims have been discussed by many, including Barrett (1987) and Gardner (1989) in this journal; but it is curious that this healing system has not been more widely recognized as based in magical thinking.<sup>3</sup> The fundamental principle of its founder, Samuel Hahnemann (1755–1843), *similia similibus curentur* (“let likes cure likes”), is an explicit expression of a magical principle. The allegedly active ingredients in homeopathic medications were “proved” effective against a particular disease when they produced in healthy people symptoms similar to those caused by the disease.

Hahnemann was well aware, says sympathetic biographer Martin Gumpert, that his theories might be relegated to the realm of "mere magic" (1945, 147), and he sought to explain homeopathy's alleged effects by reference to established science of the time. He was impressed by Anton Mesmer's (1734–1815) concept of "animal magnetism," and by the "dynamism" of philosopher Friederich Schelling (1775–1854) who taught that matter is infinitely divisible, and that "the more unsubstantial the matter became by dilution, the purer and more effective could be its 'spirit-like' and 'dynamic' functions" (Gumpert 1945, 147). So Hahnemann insisted that a "vital force" was present both in the human body and in the medications. He recognized that his successive dilutions ("potentizations") of the allegedly active substance in water inevitably reduced the amount of the original substance to none; but the water carried the essence of the active substance, with which it had been in contact; and that essence worked on the vital force of the patient. Moreover, the power of the medication—its "potency" or "dynamization," terms borrowed from Schelling—was increased by grating or pulverizing the original material and by shaking the solution ("succussion").

Hahnemann's appeal, then and today, was enhanced because he was a well-educated physician and made legitimate criticisms of certain medical practices of his day; but much in his contemporary scientific worldview was still magical. Three fundamental principles of magic are involved in homeopathy: similarity, power, and contact.

According to a survey about alternative medicine in the November 11, 1998, *Journal of the American Medical Association*, Americans' use of homeopathic preparations more than doubled between 1990 and 1997 (Eisenberg et al. 1998).<sup>4</sup> Most modern homeopathic texts are careful to emphasize homeopathy's limitations and to advise consultation with a physician if symptoms persist. But most insist that homeopathy accords with proven principles of science, citing its basis in experimentation, principles of vaccination (Edward Jenner was a contemporary of Hahnemann), and its apparent parallels to discoveries in symptomatology and immunology and the body's reactions to various physical and emotional stressors. A popular meaning of "science," apparently, is "complicated" and Dana Ullman (1988, 10) asserts that homeopathy is "too scientific" for ordinary people to figure out. Ullman goes on to argue at length for biological and physical explanations for the concepts of "resonance" and "vital force" and compares them with some of the cultural ideas of mystical "power" I discussed earlier, and even more: Chinese *chi*, Japanese *ki*, what "yogis call prana, Russian scientists call 'bioplasm,' and *Star Wars* characters call 'The Force'" (p. 15); and (p. 34, n. 1) he cites Frazer's classic study of magic for cross-cultural parallels to "the law of similars!" Later, he and Stephen Cummings (Cummings and Ullman 1991) are more careful, and conclude that science has yet to explain just how it "works." For now, the best expla-

nations for claimed successes with homeopathic cures—assuming the original ailment was clinically genuine—are 1) as they are completely inert, homeopathic remedies allow nature to run its course, as Duffy (1976, 112ff.) has indicated;<sup>5</sup> and/or 2) the placebo effect, which currently is the subject of renewed interest in medical research.<sup>6</sup> Indeed, when anthro-

## Fallacies in homeopathic claims have been discussed by many, but it is curious that this healing system has not been more widely recognized as based in magical thinking.

pologists indicate beliefs and cultural/psychological expectations as responsible for magical cures—or for the deleterious personal effects of hexes or taboo violations—it is the placebo effect they are talking about.

Various other "alternative" and "New Age" beliefs are obviously magical; many are ancient and widespread. Crystals have long been believed to contain concentrated power; colored crystals have specific healing effects, as certain colors are associated with parts of the body—as they have been in the West for centuries. Colors enhance powers ascribed to candles and other ritual devices. In the early 1980s I gave accommodation in my home to a young New Age enthusiast. Tom, as I shall call him, for some weeks wore a small cloth bag of crystals pinned inside his shirt, over his heart. One morning I noticed that among the items he had laid out for his day was a small brown bottle of liquid, bearing the label "Tom's Red Water." He explained that a member of his therapy/discussion group produced this for all who wanted it: he wrapped a large glass jug of water in red cellophane and placed it in sunlight all day long. Each person carried a small bottle of this energized liquid and sipped from it four times a day.

But the magical healing power of colors seems universal. My colleague Ana Mariella Bacigalupo informed me that health workers among the Mapuche of Chile found that their patients were indifferent to the standard white antibiotic pills; but they willingly took red-colored pills because red is culturally associated with exorcism (as it is elsewhere, and was in early Europe and England; see Bonser 1963, 219). Six studies reviewed in the *British Medical Journal* in 1996 confirmed popular European and American expectations about the color of pills: red, yellow, or orange pills are expected to have a general stimulant effect, blue or green are sedative; and specifically, red is cardiovascular, tan or orange is skin, white is all-purpose. The authors correctly point out that cultural associations may vary, though red, for blood, hence vitality, is probably universal (de Craen et al. 1996).

Social-psychological explanations for people's continued use of magic in an increasingly scientific and technological age agree that it gives individuals a sense of control, hence an important

increase in self-confidence in a confusing and impersonal world. When the objective is relief from some personal ailment, such confidence may generate feelings of improvement, albeit perhaps temporary, through the placebo effect.

The physiological effects of cultural expectations—an explanation for the placebo effect—were indicated in the 1970s, in a number of Swedish/Thai studies that showed that people who liked the appearance, and the taste, of what they were eating absorbed more nutrients from it. This was explained in reference to the “cephalic phase” of the digestive

**Crystals have long been believed to contain concentrated power; colored crystals have specific healing effects, as certain colors are associated with parts of the body—as they have been in the West for centuries.**

process, affecting the flow of enzyme-laden salivary, gastric, pancreatic, and intestinal secretions. Thai and Swedish diners were indifferent to each others' cuisines, and neither group was interested in one of its own favorite meals whose components had been blended in a high-speed mixer. In such cases, iron absorption fell by 70 percent (see Hallberg et al. 1977; reported in *Tufts University Health & Nutrition Letter*, October 2000).

### Neurobiological Bases for Magical Thinking?

Of all the principles of magical thinking I discussed earlier, Frazer's principle of similarity is most basic. This is the basis for the universal and timeless beliefs and practices involving notions of resemblance, falling under the general rubric of “imitative magic,” and the principle that has most persuaded scholars to suggest that a basic mechanism of human cognition may be at work. It has long been understood that imitation lies at the basis for learning among higher primates and humans. Specific brain mechanisms involved in imitation among monkeys have recently been identified, and their implications for primate and human perception, symbolism, communication, and action have been recognized (Rizzolatti and Arbib 1998). Therefore, a 1999 discovery among human subjects by brain scientists is especially exciting. Marco Iacoboni and his colleague (Iacoboni et al. 1999) asked healthy participants to observe pictures of specific finger movements, and to imitate those movements while their brain activity was measured; and later to move the appropriate finger when shown only pictures of simple cross marks spatially representing the fingers involved in the earlier movements. Their experiments showed that specific areas of the human brain are involved in imitation, both when the

stimuli are actions *and* symbolic representations of actions. The implications for magical thinking are huge.

But the vast majority of the world's peoples, including many highly educated research scientists,<sup>7</sup> obviously believe that there are real connections between the symbol and its referent, and that some real and potentially measurable power flows between them. Elisabeth Targ, M.D., and her colleagues recently had “a randomized double-blind study of the effect of distant healing” published in a leading American medical journal, the *Western Journal of Medicine* (Sicher et al. 1998). (Elisabeth is the daughter of “psi energy” proponent Russell Targ.) Martin Gardner (2001, 14) reports that Elizabeth Targ is the recipient of over two million dollars of public funds from the National Center for Complementary and Alternative Medicine of the National Institutes of Health for two studies of “distant healing,” one over three years on 150 HIV patients, and one over four years on persons with glioblastoma. Methods in her 1998 study involved forty American “experienced distant healers” from several different traditions (“Christian, Jewish, Buddhist, Native American, and shamanic;” p. 359), who were given five “subject information packets” containing personal data: subject's first name, a current color photograph, and written notations on blood count and current symptoms. Healers were instructed to open their packets on certain dates and “to work on the assigned subject for approximately one hour per day for six consecutive days with the instruction to ‘direct an intention for health and well-being’ to the subject” (p. 359). Assuming that Targ's current methods are similar, we can now recognize that her generous government grants support testing of a modern form of ancient and universal image magic, involving at least four classic principles of magical thinking: power, interconnections in nature, symbols, and similarity.<sup>8</sup>

### Notes

1. For example, L. Zusne and W.H. Jones, whose studies (Zusne 1985, Zusne and Jones 1989) have set standards for some subsequent investigations (e.g., Krippner and Winkler 1996, Thomas 1999).

2. Glendower: I can call spirits from the vasty deep.

Hotspur: Why, so can I, or so can any man;

But will they come when you do call for them?

3. Some writers, e.g., Planer (1988, 189–191), do categorize homeopathy as magic; but folklorist Wayland Hand is the only scholar I have found who explicitly identifies it as based in specific principles of magical thinking. In his widely reprinted essay “Folk Magical Medicine and Symbolism in the West,” he discusses the ancient and well-known principles of similarity in medicine and refers to homeopathy as “analogic magic” (1980, 306). Hand collected at least as many instances of magical practices among modern populations throughout Europe and North America as Frazer had for the traditional world; see his *Magical Medicine*, 1980.

4. “The largest increases were in the use of herbal medicine, massage, megavitamins, self-help groups, folk remedies, energy healing, and homeopathy” (Eisenberg et al. 1998, 1571). Of “energy healing,” magnets were the most commonly used method; others most frequently cited were Therapeutic Touch, Reiki, and energy healing by religious groups. In terms of preference, homeopathy ranked thirteenth of sixteen alternative therapies in the survey, all of which showed appreciable increase between 1990 and 1997. It is interesting to note, however, that under the heading “saw a prac-

itioner in past 12 months," acupuncture and homeopathy declined, whereas all others increased. I know that many do-it-yourself acupuncture devices have appeared on the market. Visits to homeopathic practitioners declined by half, no doubt because of the flood of ready-to-use homeopathic preparations that became available; apparently homeopath Dana Ullman's (1988, 10; see below) warning to people not to self-prescribe was prescient.

5. Duffy pointed out this value for the eighteenth and nineteenth centuries, when standard treatments such as blood-letting, purging, harsh emetics, applications of heat or cold, etc., might actually harm the patient. "Natural" recovery from any disorder might be temporary or illusory, due to a cyclical nature of the disease or its symptoms, or spontaneous remission, as well as a host of psychological factors (e.g., self-delusion), reporting errors, etc., as Beyerstein (1997) has indicated. And, the original ailment may have been psychosomatic.

6. The "placebo effect," apparent physiological improvement by ailing people who unwittingly receive ineffectual ("sham") treatment, has been considered especially powerful, attributed to the strength of the "mind-body connection." In the 1990s many studies attempted to determine any clinical efficacy of homeopathy; determining the role of placebo in its relatively narrow clinical sense proved difficult, as many subjective factors may be involved (such as beliefs!—see Linde et al. 1997). On May 24, 2001, while this paper was being revised, news reports blared the debunking of the placebo effect, calling it "myth," and predicting radical reassessment of medical assumption. But that research (Hróbjartsson and Gøtzsche 2001) in fact supports my use of the term here. The cases in which placebo was deemed ineffectual were clinical trials involving "binary outcomes" (e.g., nausea, smoking relapse) measured by objective standards. In cases involving "continuous outcomes" (e.g., hypertension, pain) and subjective assessment, the researchers found placebo to be beneficial. Psychologists and anthropologists recognize that this is exactly the type of case in which faith healing, which homeopathy really is, "works."

7. Eisenberg et al. (1998) found that "alternative" or "complementary" medicine use was significantly more common among people with some college education (50.6 percent) than with no college education (36.4 percent), among people aged 35–49 than older or younger, and among people with annual incomes above \$50,000.

8. And we can be justifiably outraged at this expenditure of taxpayers' money. But Eisenberg, et al. (1998) calculated that between 1990 and 1997 visits to alternative medicine providers exceeded total visits to all primary care physicians; and several other surveys have shown the increasing use of alternative medicine across the country and throughout the world. So perhaps our outrage might be tempered by the realization that, given the huge numbers of Americans who have consulted "alternative" or "complementary" medical practitioners, the government has an obligation to support research into their effectiveness. Still, any traditional person in any region of the world could advise Dr. Targ that her chances of success would be greatly increased if she had added to her "subject information packets" items that had been in direct intimate contact with the subjects, such as hair or nail clippings or any bodily fluids, or just a fragment of an item of unwashed underwear.

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# Educational Malpractice

## *Why Do So Many Biology Teachers Endorse Creationism?*

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*We often blame the poor state of evolution education on factors such as political pressure and weak science-education standards. However, there is an additional, and simpler, explanation: the surprisingly high percentage of biology teachers who endorse creationism.*

RANDY MOORE

We have done a botched job of teaching evolutionary theory, and we had better accept the creationist challenge to clean up our act.—*Wayne Moyer*

The tragedy of it all is the state of science education in the country—it's simply, sadly, awful.—*Russell Doolittle*

**M**ost high school biology teachers accept, understand, and teach evolution. Moreover, it has been high school biology teachers (rather than college professors) who have challenged the various anti-evolution laws (e.g., John Scopes in *State of Tennessee v. John Thomas Scopes*, Susan Epperson in *Epperson v. Arkansas*, Don Aguillard in *Edwards v. Aguillard*; see Moore 2000). However, the public—that is, our former students—



overwhelmingly favor creationism over evolution. For example,

- Most Americans reject the fact that humans developed from earlier species of animals (National Science Board 1996). Similarly, almost half of Americans believe that humans were created in their present form 10,000 years ago (Gallup and Newport 1991; Larson and Witham 1997, 1998).

- A 1997 Gallup poll showed that 68 percent of Americans believe that “creationism should be taught along with evolution” in public schools; another poll showed that almost 40 percent of Americans favor the teaching of creationism *instead of evolution* (e.g., see Moore 2000; Greenwood and North 1999, and references therein).

- About half of Canadians and Americans above age eighteen reject evolution as a valid scientific concept (Sonderstrom 2000). Almost 80 percent of Americans want creationism taught in public schools, and significant percentages want to ban the teaching of evolution (see Moore 2000).

- A poll in early 2000 indicated that half of Americans believe that evolution is “far from being proven scientifically” (Finn and Kanstoroom 2000).

There have been a variety of explanations for why we’ve done such a poor job of teaching students about evolution (see, for example, Eglin 1983; Roelfs 1987; Shankar 1990; Skoog 1970; Tatina 1989; Troost 1967; and Zimmerman 1987). One example is weak science-education standards. State educational standards that emphasize evolution as the unifying concept in biology are important because they give teachers who want to teach evolution a basis for doing so. It’s distressing, then, that science education standards in many states are weak. For example, a recent study by the Fordham Foundation concluded that nineteen states do a “weak-to-reprehensible” job of dealing with

evolution in their education standards; twelve of these states shun the word *evolution* and “fail so thoroughly to teach evolution as to render their standards totally useless,” and four avoid teaching evolution altogether (Finn and Kanstoroom 2000). The report, which evaluates the standards of each state, notes for example that “Tennessee’s nontreatment of evolution is an embarrassing display of ignorance,” and New Hampshire’s “very poor treatment . . . receives an F.”

However, even strong science education standards do not ensure that evolution is taught effectively or, for that matter, that evolution is taught at all. For example, Indiana’s standards for teaching evolution received a grade of “A” and are ranked in the top ten in the United States. Nevertheless, 33 percent of Indiana’s high school biology teachers spend less than three days on evolution, 43 percent characterize their teaching of evolution as “avoidance” or “briefly mention,” and at least 20 percent do not accept or are undecided about the scientific validity of evolution (Rutledge and Warden 2000, Rutledge and Mitchell 2002). Throughout the country many biology teachers simply ignore their state’s science education standards by “not quite getting around to” teaching evolution to their students (e.g., biology teacher and creationist Rodney LeVake of *LeVake v. Independent School District #656*).

Some biology teachers accept evolution but are unwilling to teach it because it is a controversial topic. Years ago, Shotwell (1965) noted that many teachers are intimidated by students’

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and citizens' views of evolution. More recently, a Minnesota Department of Education official noted that many high school biology teachers "don't even mention evolution because they

**In 1970, creationist Duane Gish used *The American Biology Teacher* to denounce the "indoctrination" practiced by biology teachers and beg for "a balanced presentation in our schools" of evolution in science classes.**

know what's coming and they just don't want to deal with it." Those fears continue; as a high school teacher told me last year when I asked him why he didn't include evolution in his course, "I stay away from that topic."

School board members, religious activists, students, and well-funded anti-evolution groups pressure teachers to include creationism in science courses. For example, Answers in Genesis has organized hundreds of "Creation Clubs" at high schools to help students promote religion and repudiate the teaching of evolution; these clubs are sponsored by high school teachers who sign pledges to base their teaching on the "inerrant word of God" (see discussion in Moore 2000).<sup>1</sup> Teachers feel these pressures (Randak 2001). For example, 29 percent of high school biology teachers in one county in Georgia have felt pressure to decrease their coverage of evolution and/or increase their coverage of creationism (Buckner 1983); in Kentucky and Ohio the percentages are 21 and 12, respectively (Ellis 1986, Zimmerman 1987; also see Pierce 1981).

Administrators also feel these pressures, often in the form of lawsuits designed to undermine the teaching of science by forcing creationism into science classrooms. For example, *Segraves v. State of California* and *Wright v. Houston Independent School District* were initiated by parents on behalf of students, and *Willoughby v. Stever* and *Crowley v. Smithsonian Institution* were initiated by religious activists. The pressures felt by administrators also appear in less public forms. As noted by a principal in Tennessee, "We try to avoid in-depth discussion of . . . evolution . . . We don't need the controversy. . . . If I say the wrong thing, I could be looking for another job." An administrator in Utah made a similar observation: "Teachers are cautious, mostly because they just don't feel comfortable teaching something they don't believe in themselves. . . . And those who do believe evolution understand the culture and know they could have hostility coming down all around them" (Wolfson 1999a, b).<sup>2</sup>

In several states, legislatures encourage teachers to teach creationism. For example, in 1990 the Kentucky legislature re-enacted a 1976 law stipulating that teachers who cover evolution in their classes can also teach "the theory of creationism as presented in the Bible" and that students who adhere to the biblical account must get full credit on exams. Similarly,

Kentucky education officials group evolution with gun control and other controversial topics as subjects that "may or may not be suitable for assessment items" (Scanlon and Uy 1999), and Louisiana's Committee for Scientific Standards groups evolution with subjects such as incest, the occult, witchcraft, and drug use as topics that should not be on the state's exit exam (Moore 1999c). At the national level, House Republican Whip Tom DeLay has linked the teaching of evolution with school shootings, birth control, and abortion (Mr. DeLay's power play 1999).

All of these factors have contributed to the poor teaching of evolution in public schools. However, there's another important reason why the topic of evolution is taught so poorly. This reason is one that most science teachers and professional scientific organizations do not talk about; namely, that surprisingly large percentages of biology teachers are creationists.

Group	Percentage	Researcher
Kansas teachers	Up to 50% in some schools	Aldrich 1999
South Dakota teachers	39	Weld and McNew 1999
Illinois teachers	30	Nickels and Drummond 1985
Kentucky teachers	69	Ellis 1986
Louisiana teachers	29	Aguillard 1999
Ohio teachers	38	Zimmerman 1987
Georgia teachers	30	Eglin 1983
Georgia teachers (one county)	32	Buckner 1983
Ohio school board presidents	53	Zimmerman 1987-1988
School board members	75	Finding 1980
United States teachers	45	Affannato 1986
United States teachers	39	Nelkin 1982

Table 1. Percentages of high school biology teachers and administrators who believe that creationism should be taught in science classes of public schools.

### How Extensive Is the Belief in Creationism Among Biology Teachers?

Table 1 summarizes a variety of studies documenting that many biology teachers believe that creationism should be taught in science classes in public schools; even larger percentages of administrators share this view. Table 2 summarizes several studies documenting that many biology teachers teach creationism in their biology courses. These data support Don Aguillard's observation that "creationism is alive and well among biology teachers" (Moore 1999c).<sup>3</sup>

Data in tables 1 and 2 are supported by a variety of other observations. For example,

- In Oklahoma, 33 percent of high school biology teachers place little or no emphasis on evolution. In Kentucky, Indiana,



and Tennessee, 23 percent of high school biology teachers have the same view (Weld and McNew 1999).

State	Percentage	Researcher
South Dakota	16	Tatina 1989
Louisiana	14	Aguillard 1999
Georgia	27	Eglin 1983
Kentucky	30	Ellis 1986
Oregon	26	Affannato 1986

Table 2. Percentages of high school biology teachers who teach creationism in their classes.

- In Louisiana, 24 percent of high school teachers believe that creationism is scientifically valid, and another 17 percent are not sure. Even more (29 percent) believe that creationism should be included in high school biology classes. More than one-third of the high school biology teachers in Louisiana's public schools allocate time to creationism (Moore 1999c).

- In Minnesota, 40 percent of biology teachers spend little or no time teaching evolution (Hessler 2000).

- In Pennsylvania, one-third of high school biology teachers do not believe that evolution is central to biology (Weld and McNew 1999).

- In Indiana, 33 percent of high school biology teachers reject or are undecided about whether evolution is a scientifically valid explanation of the state of living organisms of the past and present (Rutledge and Mitchell 2002).

Many biology teachers proudly proclaim their endorsement of creationism. For example, when The National Association of Biology Teachers (NABT) organized its "Fund for Freedom in Science Teaching" in the 1970s to combat antiscience, it got a backlash from offended members as "letters poured into" the national office demanding that NABT give creationists equal time and stop trying to "silence people," "persecute creationists," and "promote atheism and agnosticism in the schools" (Nelkin 1982). To appease these creationists, NABT sponsored a well-attended creationism panel at its annual meeting and allowed creationists to use *The American Biology Teacher* to condemn evolution and promote creationism and anti-science (Nelkin 1982). For example, in 1970, creationist Duane Gish (1970) used *The American Biology Teacher* to denounce the "indoctrination" practiced by biology teachers and beg for "a balanced presentation in our schools" of evolution in science classes. Gish's calls for equal time and balanced treatment for creationism later became a rallying cry for the revival of creationism that led to *McLean v. Arkansas* and *Edwards v. Aguillard*. Pleas for equal-time remain popular today.<sup>4</sup> In 1973, John N. Moore (1973)—an editor of the creationism-based textbook entitled *Biology: A Search for Order in*

*Complexity*—branded evolution as unscientific, "purely conjectural and speculative," and supported by "circumstantial evidence." Later that year, Gish (1973) again used *The American Biology Teacher* to present creationists' arguments, promote a "two-model" approach for granting equal time for evolution and creationism (i.e., a "creationism model" and an "evolution model"), and tell biology teachers that it was "time for a change."

Many of today's biology teachers feel no different; they're proud of being creationists. For example, here are some recent proclamations by biology teachers (Harp 1999, Scanlon and Uy 1999, Wolfson 1999a, b; see Moore 1999a):

"[I don't want] want anything to do with the word *evolution*."

"I don't use the word *evolution* [because I'm] a Christian . . . so I don't think I evolved."

"[I'm a creationist and] don't think God needed *evolution* to create his world."

"A lot of biology teachers don't touch evolution."

"We believe the Heavenly Father has created all things . . . We just try to teach the truth."

I hear similar proclamations each year at the annual meeting of the NABT, and as editor of *The American Biology Teacher* I regularly receive letters from creationist members who are upset when the journal publishes an article or editorial critical of creationism. Here's a typical letter:

### A major reason for the public's poor understanding of evolution is that many biology teachers teach creationism, do not teach evolution, or teach evolution poorly, sometimes because the teachers themselves are creationists.

In response to your issue devoted to evolution and the Scopes trial, I have sent a special donation to my favorite creation groups; Answers in Genesis and The Institute for Creation Research.

Biology makes no sense *except* in the light of creation and a relatively short time span. I take every opportunity I can to show my students the convoluted and misleading statements and reasoning that are made in their textbooks. I show them for example that one of the best examples of evolution given in their text—the peppered moth—in fact still is a peppered moth even now. Mutations are defects in the once-perfect creation . . . Evolutionary concepts and preconceptions hamper research in biology. I want to make sure that my students are ready for the future.

I will not sign this letter because there are too many thought police out there who would love to invade my classroom and stamp out free inquiry and thought. I love my job.

Although not all of these creationists may teach creationism in their biology classes, many do (table 2; also see Harrold and Eve 1987); creationism is even taught at John Scopes's school today (Moore 1999b). Perhaps this is to be expected, since teachers' understandings of and personal views about a subject

affect their decisions about teaching the subject (Carlesen 1991; Grossman 1989; Hashweh 1987; Shulman 1986; Wilson, Sculman, and Richert 1987).

## Teachers who have a better understanding of evolution and the nature of science allocate more time to (and do a better job of) teaching evolution.

### Consequences

A variety of professional societies have emphasized that students should have a thorough understanding of evolution (American Association for the Advancement of Science 1989, National Association of Biology Teachers 1997, National Academy of Sciences 1998, National Research Council 1985, National Science Teachers Association 1997). Clearly, however, biology teachers have failed to provide this (e.g., Eglin 1983, Johnson 1986, Roelfs 1987, Shankar and Skoog 1993). As a result, "over a quarter—and perhaps as many as half—of the nation's high school students get educations shaped by creationist influence—in spite of the overwhelming opposition of the nation's scientific, educational, intellectual, and media establishments" (Eve and Harrold 1991).

A major reason for the public's poor understanding of evolution is that many biology teachers teach creationism, do not teach evolution, or teach evolution poorly, sometimes because the teachers themselves are creationists (Monsour 1997, Kennedy 1998, Lerner 2000; also see above). This is partially due to the teachers' poor training. In Louisiana, for example, many of today's high school biology teachers don't recall hearing the word *evolution* in their college biology courses, apparently because many biology professors do not teach evolution (Moore 1999c). Similarly, Rutledge and Mitchell (2002) correlated teachers' acceptance of evolution and their allocation of increased amounts of time to evolution in their courses with teachers' academic background: teachers who have a better understanding of evolution and the nature of science allocate more time to (and do a better job of) teaching evolution. In Indiana and many other states most biology teachers never take courses about evolution or the nature of science (Rutledge and Warden 2000, Rutledge and Mitchell 2002).

Many educators have argued that the teaching of evolution in high schools would be improved by requiring future teachers to take courses that emphasize evolution and/or the nature of science. Such courses may enlighten students such as this one who combined his ignorance of science with a postmodern twist to come up with this justification for questioning evolution (Larson and Witham 1999): "It's just what a person believes. No one was there that's still alive

today that actually witnessed creation or evolution. It's just what a person believes. I mean, we have no right to say what exactly is true."

However, these courses will probably have little or no effect on most other students (especially if the courses are taught by creationists), because most students' beliefs about evolution and creationism—however incorrect—are ingrained long before their formal science education begins. This is why Sinclair and Pendarvis (1998) concluded that "students' misconceptions remained well ingrained even after a thorough coverage of the evidences supporting evolution." Similarly, Lawson and Worsnop (1992) have concluded that "the strength of religious commitment contributes negatively toward an initial belief in evolution and to a shift toward evolution during instruction. In other words, highly religious students are more likely to express a belief in special creation and are less likely to give it up during instruction" and that instruction has almost no effect on beliefs.

### Notes

1. The annual budgets of antievolution groups are formidable; for example, Answers in Genesis had a budget of \$3,702,800 in 1998, whereas that of the Institute for Creation Research was \$4,167,547. For comparison, the budget of the National Center for Science Education for 1998 was \$258,957 (Cole 2000).

2. Biology teachers have a longstanding reluctance to publicly support evolution or criticize creationism. For example, the various antievolution laws passed in the 1920s banning the teaching of human evolution in public schools, colleges, and universities went unchallenged for more than forty years; not one teacher or professional organization would challenge any of the laws. Similarly, in the 1980s, only nine other science teachers in Louisiana were willing to join Don Aguillard's challenge to the state's "balanced treatment" law (Moore 1999c).

3. The popularity of creationism among biology teachers is not a recent development. Indeed, large percentages of biology teachers have always been creationists who, in many instances, have taught creationism. For example, a national survey done by the Union of American Biological Societies in 1942 involving more than 3,100 respondents indicated that less than half of high school biology teachers were teaching evolution (Riddle 1941). Riddle concluded that "biology is still pursued by long shadows from the Middle Ages, shadows screening from our people what our science has learned of human origins . . . a science sabotaged because the central and binding principle displaces a hallowed myth." In 1959, Herman J. Muller—after noting the popularity of creationism among biology teachers—made similar conclusions when he noted that biology teaching in public high schools was dominated by "antiquated religious traditions" (Muller 1959).

4. The first national organization to urge that creationism and evolution be given "equal time" in public schools was the Ku Klux Klan in 1925 (Wade 1987). The Klan's recommendation was ignored after the Scopes trial as evolution disappeared from biology textbooks (Moore 2000). Demands for "equal time" and "balanced treatment" were revived in the 1970s by Gish and other creationists.

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# Philosophers and Psychics: The Vandy Episode

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*A modern philosopher has proposed that various well-documented instances of postmortem communications have a "naturalistic explanation" involving psychical transmissions and premature burial. The present discussion critically examines these claims.*

KENNETH OLDFIELD

In 1998, Arthur R. Miller, a philosophy professor from the University of Texas at San Antonio, published "Survival and Diminished Consciousness" in *The Journal of Philosophical Research*. Here Miller argues the case for mediumship based on a supposedly well-known and well-documented incident involving Edgar Vandy. He calls the Vandy episode "one of the most celebrated" instances of psychical communication (483, Miller's emphasis).<sup>1</sup> Miller describes how, in 1933, the recently entombed Edgar Vandy seemingly contacted several psychics. Miller's article explains why he considers this a potential example of medium communication and why such events still could have what he calls a "naturalistic explanation." After detailing his hypothesis,



Miller shows why his explanation allows him to reject claims of an afterlife. For Miller, if seemingly paranormal events (here, communication with the dead) can be accounted for naturalistically, then, ipso facto, they are not necessarily legitimate evidence for life beyond the grave. Miller's argument entails the possibility of mind reading and premature burial.

### Edgar Vandy's Death

In August 1933, Edgar Vandy died under "mysterious circumstances" (483) in a "strange [drowning] accident" (495, note 7. Miller quoting Rowe) at a private swimming pool in Sussex, England. Edgar was considered "an exceptionally brilliant young engineer and inventor whose whole life was concentrated on his work" (Gay 1957, 3). He resided with his mother and two brothers in London. Only a few people knew about Edgar's accident. As related by Miller, a medium allegedly revealed that Vandy somehow "struck his jaw (there were bruises under the chin and his tongue had been bitten through), lost consciousness and had then drowned" (Miller 1998, 483–484). Apparently, Vandy hit his jaw while springing off the diving board into the pool. It was determined that Vandy had suffered "some sort of stunning blow," presumably to the head, "just prior to the drowning" (495, note 7. Miller quoting Rowe).

Nobody saw the accident. The first person on the scene was Vandy's friend "N.J.," who arrived to find "the dying Edgar fluttering in the water" (484). Apparently, N.J. "tried to help, but for some reason was unable to do so" (495, note 7. Miller quoting Rowe). Eventually, Vandy's family, unhappy with the inquest, started its own investigation. Miller notes that when he died, Edgar's brother, George, "had been and was (then) a member of S.P.R. (the Society for Psychical Research)" (483), an association headquartered in London, England. According to Miller, this "august body" has a "long and venerable history" (481). As the name implies, it studies claims for psychical communications, including medium telepathy. Given George's S.P.R. affiliation, Vandy's family contacted several mediums seeking "readings" about the drowning. These relatives wanted more details about how Edgar died. Vandy's brother, George, contacted Drayton Thomas, a well-known S.P.R. member, and asked him to be a proxy sitter and gather more facts about the drowning.

By definition, proxy sitters know little or nothing about the subject being contacted. Surrogates are used in medium readings to prevent fraud. Because they do not know the deceased,

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proxies cannot, through furtive actions, unintentionally reveal information that a psychic could then use in tailoring her (Miller uses feminine pronouns because “virtually all mediums . . . are . . . women . . .”, 494, note 2) responses; because he knew little of Vandy, Thomas could not inadvertently reveal clues about whether the medium was accurately describing Edgar’s life or death. The proxy only knew that “information was being sought about a brother who had died recently, particularly about the cause of death.” Thomas received no “names, dates, places, etc.” concerning Vandy’s passing.

Although no telepathists provided sufficient information to “satisfactorily clear up the matter” (483) of Vandy’s demise, some furnished facts about the incident and “the nature of his work . . . supposedly . . . known only to Edgar himself and, perhaps, by one or at most a very few close friends . . .” (483, Miller quoting Rowe). One psychic described how the subject had drowned after striking his head on a diving board, afterwards losing consciousness under water.

Although some psychics correctly described certain aspects of the accident, Miller still questioned the veracity of their observations. That is, because nobody knew *exactly* how Edgar perished, the telepathists’ claims were not falsifiable. However, one medium’s comment caused Miller to conclude that perhaps Vandy really had communicated telepathically.

Edgar was an inventor. Just before he died, he supposedly designed “an elaborate ‘Electroline’ Drawing Machine.” (The S.P.R. report calls Vandy’s discovery “Lectroline.” The present discussion uses the S.P.R. term.) Because he worked in “great secrecy” in a room at a cousin’s house, nobody else knew about this contraption. According to Miller, “We don’t know whether the cousin himself had knowledge of the invention” (484). Nobody else understood Vandy’s work, not even his two brothers. Lectroline was never patented, so there was no public record of its existence.

During the proxy sitting, one medium described Vandy as having been involved with “machinery,” “something to do with wireless or radio” (484, Miller quoting Broad). She provided other details suggesting that, indeed, she was communicating with Edgar. According to Miller, “unlike the reports dealing with the circumstances surrounding the drowning, we do have information ‘imparted’ which can be confirmed—and it was—information that very few (perhaps only Edgar himself) was [*sic*] privilege to” (484–485). Miller interprets this as possible evidence for the alleged mediumship; Vandy and the psychics may have been communicating telepathically.

### Miller’s Views on the Paranormal

Before evaluating his “naturalistic” explanation for medium telepathy between Vandy and the psychics, it is important to establish that Miller accepts the possibility of mediumship. He says there are several seemingly validated instances of psychical communications. He proposes, “the Vandy case is only *one* of a considerable number of such cases reported in the archives of the SPR” (485, emphasis in original). Miller uses the Vandy episode to examine mediumship only because it is easily summarized and contains all the salient points needed to justify his

hypothesis about how Edgar could talk with a mind reader.<sup>5</sup>

Second, it is important to note how several times Miller acknowledges that some people can have paranormal powers. He reasons, “At the same time, however, one can hardly fail to be impressed by (some of) the evidence of medium telepathy—the alleged communication with the personalities of the deceased” (479).

At least five other times Miller affirms the possible legitimacy of mediumship, including: 1) “The occurrence of mental telepathy is by now a firmly established empirical phenomenon. The statistical results forthcoming from the current (serious)<sup>4</sup> ongoing research is quite impressive, and its significance would never be dismissed in the context of any other (‘hard’) scientific research” (489), 2) “the apparently extraordinary data encountered in such well-documented cases of alleged medium telepathy . . .” (490), 3) “some of the (extraordinary) data with which we are presented by alleged cases of medium telepathy” (487), 4) “while taking the evidence of parapsychology seriously”<sup>5</sup> (494), and 5) “such apparently astounding and impressive cases (of telepathy)” (482).

Miller distinguishes between scam<sup>6</sup> (480) and authentic telepathists. Understandably, his naturalistic explanation only encompasses “genuine” psychics; Miller restricts himself to instances of medium telepathy worthy of serious attention including “those cases which have been so thoroughly documented and so closely-monitored” to be judged trustworthy. Particularly, cases “included in the various studies conducted by the Society for Psychical Research” (480–481).<sup>7</sup>

Miller’s trust in S.P.R. research derives, in part, from its former, and prestigious, presidents. According to Miller, the roster “reads like the Who’s Who in western intellectual and academic circles during the past century, including such luminaries as the philosophers C.D. Broad, William James, H.H. Price, the psychologists William McDougall, Gardner Murphy, R.H. Thouless, and the physicists Sir William Crookes, Sir Oliver Lodge, and Sir William Barrett” (481).

Miller calls Broad a dignitary and notes how Broad commented on the Vandy incident as follows: “It is quite incredible that the amount and kind of concordance actually found between the statements made by the various mediums at the various sittings (for Vandy) should be *purely a matter of chance/coincidence*” (485, Broad’s emphasis).

Miller acknowledges that some people will never accept mediumship, no matter the evidence. He finds such skepticism particularly galling, given the abundance of corroborating support for telepathy. Miller says these doubters are discernible by their “mere stubborn refusal to weigh or take seriously the evidence forthcoming from the area of parapsychology.”

Elsewhere, Miller attacks the incredulous by noting: 1) “[C]ertainly, even the most hard-boiled and die-hard-skeptics—with the possible exception of the most stubborn, recalcitrant and disingenuous—are forced to admit in the face of such cumulative evidence [S.P.R. reports of survivalist communication] . . . that it really *is* simply too much to be written off as a mere instance of chance co-incidence” (485, Miller’s emphasis), and 2) that these doubters “no longer deserve . . .

to be taken seriously (just what *would* constitute *prima facie* plausible evidence for such a skeptic, one wonders with justification?) (494, note 16, Miller's emphasis).

Although Miller eventually speculates why some "rare persons [are] gifted with such incredibly well-developed telepathic abilities" that they can 'read [his] mind' . . . (with or without any obvious or subtle verbal or non-verbal cues on [his] part)," he, nevertheless, admits he does not understand the origin of psychic talents. He only knows that there are a "very few persons (who) are so tremendously gifted (whether by birth, training, or whatever—it doesn't really matter) with telepathic abilities that they are able to reconstruct the personalities of the deceased from the minds of his or her survivors" (485).

Finally, Miller contends that psychic readings are considered paranormal only because "we do not yet know all of the laws of physics" (496, note 18). For Miller, mediumship is not inherently contrary to all physical laws but could simply be a matter of our not understanding the workings of nature well enough to explain psychical communications. The real problem is "our current understanding and knowledge (which, to put it bluntly, is tantamount to virtual ignorance) of the laws . . . govern[ing] such phenomena as mental telepathy and clairvoyance. . . ."

By offering a naturalistic explanation for apparently mysterious events, Miller seeks to advance our potential understanding of seeming medium communications with dead people.

### Miller's Theory of Medium Telepathy

Miller's interpretation of the Vandy incident depends, in part, on breakthroughs in the healing arts. Over the last century, medicine has made great strides in detecting life signs. These advances have occurred so swiftly that the medical community must constantly redefine "death." Physicians now speak of people being "brain dead."

Before this century, medical procedures were so crude that sometimes people were buried prematurely.<sup>8</sup> Although the person's heart still functioned, the beat was imperceptible to the attending physician, or as Miller notes, "hands pressed to the chest cavity or a thumb on the wrist for measuring the pulse" did not detect life signs."

If those presumed dead were not buried prematurely (perhaps they were left lying around the morgue for several days) some would revive. They were never *really* dead. They simply did not emit vital signs perceptible to medical instruments of the day. Had these people been buried beforehand, their condition would have remained unknown, unless, of course, they had awoken in time to tap loudly enough on the coffin's interior to gain someone's attention.

Today, the chances of misinterpreting "death" are much smaller. Contemporary physicians can use highly refined technologies, such as stethoscopes, electrocardiograms, and encephalograms, to detect minimal life signs.

Still, Miller cautions, just as past healing practices are considered primitive by today's standards, future generations might

think our therapies crude. Continuously improving technologies permit physicians to measure increasingly fainter life signs. These technological enhancements may be limitless, meaning we may never conclusively define "death." If we could time travel and retrieve medical devices from the future, we might bring these back and use them to discern seemingly imperceptible life signs in people considered dead by today's standards.

**Some people, assuming Vandy was dead, have argued that posthumous medium contacts are evidence for an afterlife. Miller's response is to say that because Vandy might have been alive, although his vital signs were undetectable, he could still talk with a medium.**

Having established that we might be burying some people prematurely, Miller then proposes that if psychics can read living people's minds, then certainly they can read thoughts from people near death. While people are alive, even if we cannot detect their vital signs with current technologies, they can still contact a psychic.

Miller calls this interval between "death" and life "diminished consciousness" (490). He concludes that this could have been Vandy's condition when he contacted the medium. Eventually after all his vital signs ceased, Edgar lost touch with the material world.

Besides explaining how a medium could read thoughts from someone presumed dead, Miller's theory allows him to reject immortality. Some people, assuming Vandy was dead, have argued that posthumous medium contacts are evidence for an afterlife. Miller's response is to say that because Vandy might have been alive, although his vital signs were undetectable, he could still talk with a medium. After passing beyond a "diminished state of consciousness," Edgar lost contact with the psychic.

In summary, Miller's naturalistic explanation allows him to reject the argument that medium communication between the living and "dead" is *prima facie* evidence of an afterlife. Instead, Miller argues that because Vandy was alive, he could still send what seemed like "messages from beyond the grave."

### Evaluating Miller's Hypothesis

There are at least four significant problems with Miller's proposal. First, he says the Vandy case is only one of many S.P.R.-documented instances of a psychic achieving numerous "hits" while supposedly telepathically interacting with someone. Miller's language suggests he reviewed numerous S.P.R.-documented cases of supposed postmortem psychical contacts before making his proposal.

Moreover, at the end of his piece, Miller acknowledges that if anybody could locate just one other instance of someone seemingly contacting a psychic after having died a horrifying death—where the victim was obviously "immediately dead," e.g., decapitated—this *one* instance would falsify his

"diminished consciousness" hypothesis. Miller reasons, "Thus, for example, if in a case like that of Edgar Vandy, the corpse were cremated shortly after death, or if the person in question were the victim of a physically traumatic death which rendered his brain and/or central nervous system virtually non-existent in its normal, operative form, then this would immediately give the lie to the hypothesis of diminished consciousness" (492). Before reading Miller's paper, I knew nothing about S.P.R. and its records of possible postmortem psychical contacts. After finishing the article, I posted a message to the S.P.R. Web site asking if anybody could cite a documented instance of psychical contact where the communicator was "obviously dead" and long afterwards supposedly recorded several psychical "hits." Someone immediately provided the requested citation (Haraldsson and Stevenson 1975). The suggested materials explained how, in 1879, an intoxicated Runolfur Runolfsson fell asleep along the Icelandic seashore. During a storm the sea flooded in and drowned him. Soon the tide receded, carrying Runolfsson's body out to sea. Eventually, Runolfsson's body washed ashore in pieces. Speculation is that Runolfsson's body was dismembered either by seals and shrimp while it was submerged, or by dogs and ravens after it washed ashore. Fifty-eight years later, in 1937, a medium supposedly achieved several "hits" while communicating with Runolfsson. In short, with little effort, I found "evidence" refuting Miller's proposition. One wonders why the *JPR* referees did not invest minimal effort in seeking similar information and then recommend against publishing Miller's paper because Miller apparently did not bother to gather essential background information about his topic.

Second, Miller seemingly did not consult the original S.P.R. report before writing his paper. Instead, he relied on two summaries of the case (494, notes 4 and 5). He offers no rationale for this approach, which makes it easy to argue that contrary to Miller's assertions, the Vandy case is *not* a substantial instance of psychical contact. Nor, I hasten to add, is the just-cited Runolfsson case. That is, Runolfsson could not meet the evidentiary standards common among scientific journals. Runolfsson is used here: a) only to show that instances of purported postmortem psychical communications by those who perished violently are easy to find, and b) as the one illustration necessary and sufficient to falsify Miller's *empirical* argument for "diminished consciousness."

Furthermore, although Miller's writings suggest the clairvoyants revealed significant details about Vandy and his invention, the S.P.R. report clearly shows otherwise. The psychics made numerous misstatements about Edgar and the events surrounding his death. To cite only a few examples, the mediums misspoke about: George Vandy having something metallic in his pocket belonging to Edgar (8); an uncle Bob (11); someone named Molly (12); "only partially correct remarks about the Vandys' mother" (19); Edgar's room (20); Edgar's manner of death (35); the time of his death (37); the number of people who died with Edgar (40); time since the drowning (43); Edgar drowning in the sea (49); Edgar swimming with others when he drowned (50); where Edgar kept his diary (59); one of Edgar's books (55); and the Lectroline invention (50, 54, 55). The closest anyone came to identifying the

Lectroline was by referencing "machinery" (44), "wireless" (11) or "machine" (58). In short, although "Lectroline" was a vital part of Edgar's life, no medium called it by name.

The psychics also used the post hoc ploy of mentioning a letter of the alphabet and then asking if the sitter understood its meaning, after which the sitters volunteered a name starting with that letter. For example, the psychics asked about: "H" (Edgar's brother's name was Harold, which the sitter volunteered.) (10); "B" (The sitter said Edgar had a "great friend named 'Bartram.'"") (16); and "M" (The sitter explained, "Our youngest sister was always known to us as Millie.") (29). Interestingly, even these vague, one-letter references were sometimes judged "irrelevant" (16) or "incorrect" (36).

There were numerous other instances of mediums using vague statements the sitter clarified post hoc. For example, the psychics said: "Do you know what he [the deceased Vandy, who was supposedly speaking to the psychic] means by [five pounds currency] . . . (14)? The sitter said Edgar had slightly less than five pounds currency in his pocket when he died (14). The psychic also claimed that Edgar had a stressful job. The sitter volunteered that in recent years Edgar seemed "on the verge of a breakdown" (12). As a final example, the psychic said at one point, "I am getting an impression of someone who built houses, or something rather to do with houses" (58). The sitter said his (the sitter's) younger brother was a real estate agent (58).

Finally, some of the psychics' comments seemed, frankly, dim-witted. For example, they stated: "He (Vandy) says if he had altered his plans a little this wouldn't have happened" (7); "you remember the way he talked, very rapidly when he was excited" (17); and "I also sense that it was quite an accident in a way, but if plans had been changed, or something had happened, it would not have happened" (43).

In sum, all the Vandy "hits" can be explained as "cold readings," luck, preparatory research, or common parlor tricks.

Third, Miller's proposal has an illogical premise. Early in the discussion he mentions possible ways of detecting whether a telepathist is communicating with the dead. One tactic involves "show(ing) up at the medium's doorstep unannounced, and demand(ing) a sitting right there and right then" (Miller 1998, 481).

Presumably, Miller's unexpected appearance prevents the medium from doing a background check on the potential subject. If an unprepared medium offers intimate details about the deceased, this might be strong evidence of paranormalism, and perhaps even an afterlife.

Of course, Miller could never surprise a "real" psychic. By definition, "serious" mediums should never require appointments, unless mind reading, like my cordless telephone, has a very short communication range . . . but that is another story.

Fourth, Miller fails to mention an important fact about the length of Edgar Vandy's possible "diminished consciousness." Edgar died on August 6, 1933. The first of the six psychic sittings was on August 24, 1933. The last was on November 11, 1933 (Gay 1957). At this final sitting, the medium mentioned facts George Vandy interpreted as referencing Lectroline (60). Does Miller mean three months after his accident Vandy was



still *near* death? If so, should we still be expecting further (and substantial) improvements in how physicians and those in related professions recognize death, so that even three months into "diminished consciousness" some life sign can be detected? If so, when is Miller's proposal—where someone dies nonviolently (no decapitations, etc.) and then supposedly communicates telepathically—unfalsifiable? Without a threshold, Miller's hypothesis is not, as he argues, empirical.

## Conclusion

No psychic has ever demonstrated mediumship under laboratory conditions. Instead, we must read "reports" of these claimed communications. Were psychical contacts "real," certainly the findings would appear immediately and regularly in mainstream, refereed, scientific journals. The possibility of winning at least \$1 million is certainly incentive enough to demonstrate paranormalism under laboratory conditions, since this is what magician James Randi of the James Randi Educational Foundation promises any medium who can, under controlled conditions, communicate telepathically with the living or dead.

And while it is easy to say there is a worldwide conspiracy against publishing such contrary information, the chronicles of science suggest otherwise. History is replete with examples of unpopular ideas finding their place in establishment journals. Sometimes, such as the *h. pylori* theory of ulcers, replication has supported the authors' claims.<sup>10</sup> Other times, such as cold fusion<sup>11</sup> and homeopathy,<sup>12</sup> conventional publications have heralded these "alternative" claims, only later to see the assertions rejected when they could not be replicated, again showing how science is self-correcting.

Finally, it is surprising that *JPR* published Miller's paper. On its face, the piece fails to meet even elementary standards of scholarship common among refereed journals. The Vandy case is not, as Miller asserts, "so thoroughly documented and so closely-monitored as to merit our serious attention" (480). It only deserves "our serious attention" because of Miller's misstatements. Comments such as, "The occurrence of mental telepathy is by now a firmly established empirical phenomenon. The statistical results forthcoming from the current (serious) research is quite impressive, and its significance would never be dismissed in the context of any other ('hard') scientific research" (489) can only mislead researchers interested in "serious" scholarship on paranormalism.

## Notes

1. Throughout this paper, page numbers for Miller's quotes are listed according to the pagination in his journal article.

2. Miller is quoting the psychic's comments from a session transcript.

3. Miller refers to the Vandy incident as comprising "such apparently incredible 'messages'" (485).

4. Evidently, Miller thinks it important that his readers understand these are "serious" studies, for elsewhere he notes, "During the past quarter century or so, a number of reputable research centers have been established and are presently engaged in significant—and serious—work" (494). There will be more on the "seriousness" of psychical research as the present discussion advances.

5. See footnote 4.

6. For Miller, "scam" means those "sensational claims splashed across the front pages of the various tabloids displayed at the local supermarket, or the 'intellectual' gyrations foisted upon us by a successful television series in the

U.S., *In Search of . . .*" (480).

7. Miller notes, "During the past quarter century or so, a number of reputable research centers have been established and are presently engaged in significant—and serious [see note 4 above]—work" (494, note 1). Two such centers, he says, are associated with Duke and Stanford Universities. More specifically, they are studying alleged paranormal process and phenomena involving only the *living*" (494, note 1, Miller's emphasis). Miller, however, is only concerned with cases involving communications between the living and "deceased."

8. Edgar Allan Poe's *Premature Burial* exemplifies this concern with hasty entombment.

9. Miller does not consider whether physicians of an earlier time may have employed cruder but perhaps more effective means of detecting life, such as sticking a needle in the eye of someone presumed dead. Presumably, anyone with minimal life signs would have responded to probes in such highly sensitive locations.

10. See, for example, Monmaney 1993, Carey 1992, Safe 1993, and Podolsky 1991.

11. See, for example, Broad 1990, Close 1991 (a and b), and Taubes 1990.

12. See, for example, Davenas 1988, Maddox 1988 (a-c), and Page 1988.

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These next two articles and the selection of representative SKEPTICAL INQUIRER covers, 1976–2001, on pages 58 and 59 conclude our year-long observance of the 25th anniversary of the Committee for the Scientific Investigation of Claims of the Paranormal and the SKEPTICAL INQUIRER. —Ed.

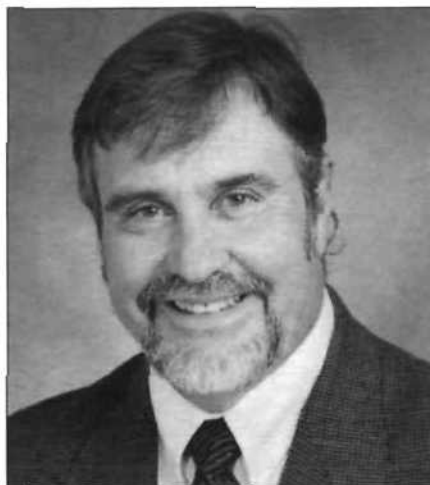
# The Origins and Evolution of CSICOP

## Science Is Too Important to Be Left to Scientists

### Lee Nisbet

**T**he founding of CSICOP was a fortuitous accident of time, place, and personalities. The founding of a CSICOP-like organization was a highly probable creative reaction of science-literate people to an immensely influential means of communication reflecting public ambivalence toward institutionalized science.

Any particular existence is contingent, not perfectly predictable. Randomness is a real trait of nature. But, when considering historical developments one might argue that a CSICOP-like organization was probable in the latter decades of the twentieth century. In this technically advanced world we had an intellectually undisciplined, economically driven means of communication serving a public highly ambivalent toward a way of knowing which had bestowed



Lee Nisbet

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the gifts of increasing material and physical security. But why the public ambivalence toward a community of inquirers that had bestowed such considerable gifts? The answers to the ambivalence question explains the evolution of CSICOP from its primarily media-oriented origins to functions both more diversified and broad in scope. Whatever creates, also destroys. Scientific inquiry carried on by an elite, specialized community has succeeded to an unprecedented degree in harnessing the processes of nature for human good. However, a logic of discovery, by nature and purpose threatens the intellectual and moral basis of traditional ideologies that materially depend on that logic (witness the threat that Darwinism poses to both contemporary theological creationists on the right and social creationists on the left). What all contemporary ideologies demand of scientific inquiry is

that it remain merely a means to secure ends established by tradition and biased thought. Unfortunately, a logic of discovery is difficult to keep in its place. Intellectual discovery requires continual correcting, both political and moral. Therefore, the publics of universities, churches, as well as political and moral movements have good reason to feel ambivalent toward any community of inquirers, no matter how valuable the outcomes

they produce. In short, both dispositions native to human nature and existing cultural institutions formed in prescientific ages are challenged by the very genie that sustains them.

However, beyond our reluctance to subject ideas with which we agree to the same degree of skepticism we subject disagreeable ideas lies another source of public ambivalence toward "science": the very process of "science education" itself. Ironically, formal science education with its narrow discipline, career-oriented focus has simultaneously created (especially in the United States) an enormously productive, successful enterprise and destroyed the very possibility of widespread, informed, public support. Worse, "science education" leaves many "well-educated" people feeling antagonistic toward institutionalized science. How so?

Formal science education as it operates now in the United States on the secondary/college/university levels is designed for not only those with superior intellectual gifts but also narrowed interests. It is narrow vocational education in the extreme. Generalists, if they exist, certainly don't prosper in the vocation of science. Specialists prosper. Young, intelligent, very focused, very intellectually narrowed people produce the cutting-edge research in today's scientific disciplines. Science people regard themselves as an elite group compared to the humanistically oriented. Their formal education receives by necessity of cost a much higher allocation of funds than those in nonscience or non-hard science disciplines, and rightfully so in their eyes. By conventional standards their intelligence and specialization produces highly valued and objective knowledge. It is not difficult then to understand given the success of the narrowed process called science education and the elitism it engenders how nonscientists might well feel excluded from, bored by, and even antagonistic toward science itself when it is identified exclusively with this process. Conceived in vocational terms, "science" becomes a specialized, arcane set of practices known only to a smug elite who serve the private and politically dominant interests of those who fund their research. Conceived in vocational terms scientific literacy becomes a thing both apart from and superior to cultural literacy. The irony of such a dualistic and elitist conception of scientific literacy in a culture simultaneously dependent on and battered by scientific discoveries is sobering.<sup>1</sup>

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Science is obviously too important and potentially too destructive to be left to scientists. The methods of scientific inquiry adopted as active dispositions, active habits of mind need to be defined as a central part of what it means to be both scientifically and culturally literate. A basic knowledge of central scientific concepts and achievements and their impact, for better and worse, on the wider culture needs to be a central part of what it means to be both scientifically and culturally literate. Intellectually narrow, cultural ignoramuses who produce powerful knowledge are not desirable educational outcomes. Culturally literate people who are ignorant and disdainful both of scientific methods and discoveries and their social, moral, and political consequences are not desirable outcomes for a culture increasingly shaped by science and technology. But how does this analysis of factors that produce public ambivalence toward scientific inquiry, scientific literacy, and the scientific community itself bear upon an understanding of the origins and evolution of CSICOP?

CSICOP originated in the spring of 1976 to fight mass-media exploitation of supposedly "occult" and "paranormal" phenomena. The strategy was twofold: First, to strengthen the hand of skeptics in the media by providing information that "debunked" paranormal wonders. Second, to serve as a "media-watchdog" group which would direct public and media attention to egregious media exploitation of the supposed paranormal wonders. An underlying principle of action was to use the mainline media's thirst for public-attracting controversies to keep our activities in the media, hence public eye.

Who thought this strategy up? Well, Paul Kurtz, that's who. In 1975 as editor of *The Humanist* magazine this media-savvy philosophy professor published a statement entitled "Objections to Astrology" which ridiculed the purported "scientific" basis for astrology and condemned newspaper exploitation of "sun-sign" astrology columns. Newspapers picked up the article—many responded negatively. Other media sources picked up on what was a brewing controversy and before long the statement (which was signed by 186 scientists) had gained worldwide attention.

On the basis of the media response to "Objections," editor

Kurtz decided to devote a major part of the forthcoming annual *Humanist* meeting to be held in late April 1976 in Buffalo to skeptical critiques of supposedly paranormal phenomenon. (I joined the magazine in November 1975 as an unemployed philosophy Ph.D. and promptly assumed duties of conference organizer and public relations man—hey, just do it!) These critiques, to be delivered by leading skeptics, would likely attract media attention and bring these individuals together for the first time.

The media coverage was unbelievable! Worldwide syndicated stories announced the formation of a new group dedicated to providing scientifically based information regarding widely publicized, supposedly paranormal phenomenon. We received front-page coverage in *The New York Times* and *Washington Post*. *Science News* sent its editor, Kendrick Frazier, who did an in-depth story concerning our mission complete with interviews of new committee members (e.g., Ray Hyman). The creation of our proposed new journal to publish skeptical critiques was highlighted in these stories. Telegrams by the hundreds poured into *The Humanist* office. Some pledged financial support (Do you need money?). Within the year of the publication of *The Zetetic* we received a full-page story in *Time* magazine as well as continued coverage in *The New York Times* and other major newspapers. We were the recipients of welcomed attack after attack on the part of the paranormal press (“The New Inquisition,” “The Return of the Dark Ages”), which gave us further media and public recognition.

Our publication, *The Zetetic*, (as advertised) featured skeptical critiques concerning media-hyped paranormal wonders. Our initial annual conferences had the same thematic emphases. Our conferences, like the journal (which became the SKEPTICAL INQUIRER), strived to attract media attention (successfully) by focusing on currently hot topics in pseudoscience. Again, the assumptions underlying these efforts were that the mass media were a major problem and both their attention and reform a primary remedy to public credulity concerning pseudoscience.

However, (I maintain) we discovered that although the way the media do business (an emphasis on the sensational to attract public attention) is an obstacle to accurate public assessment of issues, in a much more troubling, fundamental way the mass media are the public. The mass media simply share the widely held view, developed earlier in this essay, that “science” not only lies outside of popular culture but also has little to do with the ordinary thought processes of ordinary people relative to issues that interest them. The mass media, like politicians, dare not go past the limits imposed by the values and mental processes of its constituencies. Looked upon thus, mass-media credulity is more a consequence than a cause of public credulity.

Therefore, given this realization, it’s no accident that as the decades of the 1980s and 1990s progressed there was an

increasing variation of CSICOP conference topics (e.g., controversies in dinosaur extinction theories; ethical and scientific issues in animal experimentation; the teaching of critical thinking in secondary and higher education; cognitive, perceptual, physical, and motivational mechanisms underlying biased judgment; etc.). More telling yet, in the SKEPTICAL INQUIRER, we find essays redefining the nature of science literacy and science education which emphasize strategies that aim at making scientific thinking a widespread habit of mind and a subset of cultural literacy (e.g., Leon Lederman, “A Strategy for Saving Science” [November 1996]; E. A. Kral, “Reasoning and Achievement in a High School English Course” [May 1997]; Andrew Ede, “Has Science Education Become an Enemy of Scientific Rationality?” [July 2000]). One finds numerous articles, especially in the last decade, written by psychologists such as James Alcock, Barry Beyerstein, Susan Blackmore, Thomas Gilovich, and Ray Hyman, identifying the cognitive, perceptual, physiological, and motivational mechanisms involved in biased judgments together with strategies to overcome these predispositions. The investigative work of Martin Gardner, Joe Nickell, and James Randi continually detailed the hubris that selective skepticism can bring to the lives of even distinguished scientists as well as more ordinary people. Also the SKEPTICAL INQUIRER in the 1990s increasingly featured a number of essays by scientifically literate philosophers and culturally literate scientists such as Arthur C. Clarke, Richard Dawkins, Stephen Jay Gould, Paul Kurtz, Steven Pinker, and the late Carl Sagan which explore the wider meaning of scientific inquiry for the personal as well as social dimensions of life.

Of course all these topics are interspersed with the traditional core of the SKEPTICAL INQUIRER—pieces debunking the media-hyped world of the “paranormal” and the latest pseudoscientific bunk (e.g., alternative medicine). But over time the SKEPTICAL INQUIRER (under science-writer Kendrick Frazier’s astute editorship), CSICOP conferences, and the excellent courses and seminars offered through the Center for Inquiry have transformed CSICOP into a true science-education organization. Here science is conceived broadly as the cultivation of intellectual and personal dispositions that make for wise and sound judgment no matter what the subject matter. So defined scientific literacy and cultural literacy become integral, practical, and relevant to both public and personal life. So defined scientific literacy ceases to be vocationalized, elitist, arcane, archaic, and irrelevant to the lives we all lead.

## Note

1. Two recent articles appearing in the journals SKEPTICAL INQUIRER (Andrew Ede, “Has Science Education Become an Enemy of Scientific Rationality?” [July/August 2000]) and *Academic Questions* (Vladimir N. Garkov, “Cultural or Scientific Literacy” [Summer 2000]) provide valuable insights into the vocationalized, elitist nature of science education. □

# Never a Dull Moment

## Barry Karr

**I**t is amazing really when you think about it: what the ramifications can be, at least for me, from an action that basically originated as an afterthought. You see, my sister was a senior at the State University of New York at Buffalo, and she had taken a part-time job with CSICOP, which her roommate had gotten for her. It seemed that they were still a bit short-staffed and needed some help with a large press mailing. After going through a couple of her friends she eventually thought of me, a sophomore at the university. She called me up and asked if I would like to work for a few hours a week between classes. I went into the office and did what they told me, which was, I believe, stuffing about 2,500 magazines into envelopes and helping to prepare them for mailing to members of the press around the country. Now, how long it took to complete the task is uncer-



Barry Karr

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tain. I like to think I must have made good time because by my third day there, and after a couple of other assignments, I was called into Paul Kurtz's office for a job interview. I got the

position by the way and have been involved with CSICOP ever since. Lucky for me my sister didn't have more friends. Although at this point CSICOP as an organization was in its fifth year, and third office location, I still think of these as the very early days of the organization. There is a saying around the office these days: "Never a dull moment"—which is true. We used that expression back then too, but it meant a totally different thing. Whereas today it seems that there is always a new project that needs doing—some new television show or movie on the paranormal, or shameless promotion of some quack therapy that needs looking into—back then it meant that "Today it is going to rain

and we need to get the SKEPTICAL INQUIRER out the door before the leak in the ceiling destroys a thousand issues." Our offices were in a deteriorating office/apartment building in a deteriorating neighborhood in the city of Buffalo. Lunch generally meant going next door to the overpriced corner grocery store and trying to buy something with an expiration date roughly in the same year. We had basically no computer

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system; new subscriptions, renewals, and other in-house records were kept track of on index cards sorted by alphabetical order. The subscription data itself was handled by an out-of-house fulfillment agency that did the printing of the magazine and maintained our database. I can remember having to borrow a car to periodically head on down to the printer and load up with magazines and then take them over to the central post office. I can also clearly remember getting lost from time to time trying to find these places and in one exceptionally brilliant feat ending up on the bridge going into Canada.

There was, however, a definite feeling of camaraderie among the staff. We celebrated every birthday and major event in each other's lives. We held weekly and sometimes daily cookouts on the back patio, weather permitting. We even had a regular bowling night. It was certainly an interesting place to work while in college—a perpetual educational experience where I learned to think about things in a new way and not simply accept what I had been told. For example, while growing up I had been a notorious bad-movie junkie (truth be told, I still am), and was certainly a fan of all things paranormal. My favorite show was *The Night Stalker*, and I can vividly remember running home from school to watch the vampire-themed soap opera *Dark Shadows*. I was a creature of my television generation. Never had I seen or read anything to suggest that some of these things were not somehow based in reality. Of course I wasn't naive enough to believe in vampires, but I must admit to having written a glowing, wide-eyed book review on *Chariots of the Gods?*

By the time my senior year at the university rolled around I found myself working more and more hours at CSICOP each week and my status at the university trimmed to that of a part-time student. My plan had always been to go on to law school upon graduation, but a year with a first-year law student as a roommate soon cured me of that. When graduation rolled around I was very pleased to have Paul Kurtz offer me a full-time position as assistant public relations director. Although I thought I'd do this for a year and eventually go back to school I haven't quite made it back yet. I really don't regret it.

Over the years it has been my pleasure to take part in many adventures and investigations that not many of my friends, family, or neighbors have had the opportunity to experience. Probably my second-greatest thrill was the opportunity to travel to China in 1988 as part of a CSICOP team conducting investigations into *qigong* masters, amazing psychic children, and remote healers, along with other facets of traditional Chinese medicine. The results of these investigations have been well documented within the pages of the *SKEPTICAL INQUIRER*. However, it is the personal moments that don't get discussed. I remember eating a spectacular dinner one evening with our hosts. To be honest I had no idea what some of what I was eating was. Sitting across from me and staring intently was James Randi. As I brought the chopsticks up to my mouth with a morsel of something, Randi burst out laughing at me.

I never knew what it was I ate. It was good, but I never wanted to know.

Some of the other moments of the trip will live forever in my memory. I won't forget the way members of the CSICOP team played with and enjoyed entertaining the children. While a test was being conducted, everything was very serious, but the next moment at the conclusion of a test there would be Randi performing magic tricks. I remember how James Alcock, who is quite tall, would draw a crowd wherever he went, or Paul Kurtz telling jokes and laughing with them until he had tears in his eyes. He still keeps photographs of some of these children in his office today.

Also, what hasn't been mentioned is the absolute joy it was to meet with skeptics within China who requested the help of CSICOP to investigate these claims and bring in skepticism. Because of this trip an organization was established as part of the Chinese Association for Popularization of Science to promote skepticism within the country. Since then we have had a delegation from China attend several of our conferences over the years, and we were also able to send a second CSICOP delegation a few years later. This relationship continues. It illustrates the powerful impact that CSICOP has been having worldwide in stimulating skeptical inquiry and crystallizing a scientific response to the great barrage of paranormal claims.

Such people as Phil Klass, Ray Hyman, James Randi, Joe Nickell, Richard Wiseman, Massimo Polidoro, and others wonderfully fill the role of paranormal investigator/researcher. Although there is a need for more people to do investigations, they must be done well. There have been several instances where I have been involved with investigations. Perhaps the most well known is the demon-haunting case of the Smurls in West Pittston, Pennsylvania. The case was made into a book, and later a television movie. And again, our investigation has been written up in the *SKEPTICAL INQUIRER*. Fellow investigator (and former CSICOP staff member) Elizabeth Gehrman and I spent several days in West Pittston interviewing neighbors, visiting the Mining Office, the Street Commissioner, and the former owner of the house, and we briefly met with the Smurls, who would not let us in the house. However, I think my fondest memory of the trip to West Pittston was the hotel that Elizabeth and I booked. We arrived in town late after a long drive from Buffalo. We did not have a reservation confirmed at a hotel and decided to just pick the first one we saw. Little did we realize that the hotel we chose was right across the street from a porno drive-in movie theater. We were naturally suspicious when the man at the reception desk asked if we wanted the room for the night or if we wanted to pay by the hour! Being really tired we took a room with two double beds for the night. CSICOP is, after all, a nonprofit organization and we always have an eye on the bottom line. Sometime after we'd been in the room for a while Elizabeth began to complain

that there was something crawling all over her legs in the bed. I went over to her side of the room and looked to find the bed and the room covered with bedbugs.

We went to the manager to complain. He was not too nice at that point but offered us another room. His mood turned even uglier when, for some reason or another, Elizabeth would not accept this offer. Here my recollection gets a little fuzzy and I am not sure whether we had paid in cash and had demanded our money back, or told him we would stop payment on the credit card. Either way he figured we had gotten our hour's worth and threatened to call the cops on us. I do remember leaving the parking lot quickly with Elizabeth screaming at the top of her lungs. I also remember thinking that a demon-haunted house would most likely be a more pleasant experience.

On another occasion members of CSICOP and the Western New York Skeptics were called upon to look into a haunted house in the Western New York area. Several skeptics went to the house and recorded interviews with the family that lived there. Most of the events centered upon the mother of the house. She would complain, for example, that while she was lying in bed unseen spirits would pull the covers over her legs. We asked her if we could observe this and she agreed to try the demonstration. As she was lying in bed she repeatedly said that the blankets were moving and asked if we could see them. Nobody else in the room could see anything happening. (We sent our report on the case, along with all of our audiotapes, to psychologist and noted haunted-house investigator Robert Baker for his analysis. Baker ended up writing about the case briefly in his book *Missing Pieces* where he attributed the woman's condition to a neurological disorder called "restless legs.") Later, in the living room of the house, the woman claimed that every once in a while when she sat in a certain chair a spirit would flash across the room. A moment later she exclaimed that one had just done so. I too had noticed the flash and immediately suspected what was going on. I went to the window and looked out. The house was situated so that the front window looked out over an intersection and street. When a car would make a turn down the street from the intersection, the headlights would momentarily flash into the window between a gap in the curtains. She did seem to accept this when I was able to predict the next sighting.

Another event that was quite newsworthy a few years ago was the New Age "harmonic convergence," basically an alleged mystical coming together of astrology and the Mayan calendar, when 144,000 people were needed to gather in "power points" around the world to mediate, welcome alien spaceships, and heal the earth. One of these "power points" was to be Terrapin Point overlooking Niagara Falls. At dawn of the appointed day several of us were positioned around the point to see what we would see. The day's activities consisted of alternating sessions of meditation, chanting, and prayer. Needless to say, no aliens showed up and if a Harmonic Converged I must have missed

it. At one point a number of the almost 500 to 750 people became somewhat excited when a rainbow appeared over the falls. The excitement level seemed to dissipate somewhat when the skeptics started passing the word that rainbows are virtually an everyday occurrence at the falls. As I wrote in the *Western New York Skeptics Newsletter*, "When the chanting was finished and all the little crystals had been thrown over the falls, many people felt spiritually uplifted, enlightened, and full of a sense of accomplishment. But, to quote from *Newsweek* magazine, 'Making yourself feel good about the world is not the same thing as improving the world. Want to think a good thought? Think about 144,000 people volunteering an hour a week to work in shelters for the homeless. That would be something to hum about.'"

One of the investigations that skeptics around the world should be most proud of is the several-year-long investigation, led by James Randi, into the faith healers. During that time I had traveled around the Western New York area and into southern Ontario to attend the services of such faith healers as W. V. Grant, Peter Popoff, the Happy Hunters, and Willard Fuller. When James Randi went on *The Tonight Show* and blew the lid off the Peter Popoff ministry, I know that skeptics everywhere felt a tremendous sense of accomplishment. When other national media news shows did much the same to W. V. Grant, we again felt rewarded for the many hours that a number of people put into the effort. I had two experiences that will forever leave a bad taste in my mouth. The first one occurred at a healing service by Peter Popoff held in Toronto, Canada. Several members of the Western New York Skeptics and the Ontario Skeptics met in advance and planned to distribute leaflets describing our objections to Popoff and explaining what it was he was doing and how he had been exposed. Other members, myself included, would fake ailments and attempt to be healed. Popoff claimed to be directed by God as to whom to heal. Thus, our point was that, if one of us got called for healing, either God made a mistake or Popoff did not have the direct line to heaven that he claimed.

I walked into the arena with a fake limp, using a cane. Right away some of Popoff's people came up to me and asked me for the healing card I had filled out previously. I wrote that I had a ruptured disk in my back that caused severe pain in my leg when I walked. As the service started Popoff's people told everyone in the audience to crumple up the flyers they had received from the people outside because those people were unbelievers and worked for Satan. Things were not starting off well. Later on in the service, however, Popoff came down the row I was in and told me to stand up. I did. He then put his hand on my forehead and told me that God was going to heal me and took my cane and threw it up on the stage. He said that God was going to let me walk (which I could do anyway). He then told me to run

around a bit, which I did. Either God or Popoff couldn't tell I was a fake.

If we had accomplished what we set out to do, then why did I feel so bad? Because sitting next to me was a father and mother with an obviously severely handicapped child in a baby stroller. It was clear that these people had come to the service hoping for a miracle for their child. Of course Popoff avoided them. But the way they looked at me will stay with me forever. The look said, "Why you? Why should you be healed and not my baby?" It was so clear that if anyone ever wanted to prove they could perform miracles and heal the sick then this child would be absolute proof. But their look showed they hated me and not Popoff. I pulled one of our flyers out of my pocket and handed it to them asking them to really read it over. I tried to explain to them that I wasn't sick to begin with and that no miracle had taken place. I think that only made it worse, as if some miracle had been wasted on someone who didn't even deserve it. I really dislike Peter Popoff.

On another occasion the faith-healing husband and wife team, the Happy Hunters, came to Rochester, New York, for a "Healing Explosion." "Thousands will be healed!" promised the slick advertising supplement announcing the event. The first person on the podium that night was a member of the Rochester city council, who gave the opening address and read a letter of welcome from Rochester's mayor. Traveling faith healers are not unlike a touring rock and roll band, or the road show of a Broadway play in that they have a set program (or act) that they follow day in and day out in city after city. The Hunters were two of the more innovative. Not only did they themselves practice the art of laying on of hands, but they also ran a service that provided training for individuals who wished to become members of the healing teams. The Hunters did not charge for the training, but they would charge for the *training materials*.

The most striking aspect of the Hunter "healings" was the team's almost total reliance upon the lengthening of arms and legs to effect a cure. Although this trick was thoroughly exposed by James Randi in his book *The Faith Healers*, a conservative estimate on my part was that 70 percent of all treatments offered by the healing teams were of this variety.

After the service I attempted to interview a number of people who were healed that evening. I had asked if I could follow up with them again in a few weeks and a number of them agreed. After a couple of weeks I began calling back the people I had spoken to at the service. One woman said that she felt better and that sometimes healings took time. When I asked her why God would only heal a little bit at a time she said, "God works in strange ways. If he sees fit he will do it." She then said two things that broke my heart: "Maybe I'm not entitled to it" and "Maybe I'm not trying hard enough to get out" (of the wheelchair). In these statements lie the reason for much of my resentment toward faith healers. If something that they promise does not work, it is not the fault of the healer. Mrs. Hunter said,

"If you believe God is God, it is so easy to receive a healing."

The lady in the wheelchair was very devout in her faith, but she was not healed. Instead of calling into question the whole business of faith healing, or the Hunters' ability to either teach it or perform it, she blamed herself. Why weren't the Hunters able to heal her? Why wasn't she entitled to a healing?

I spoke to the Hunters two days before the Rochester event when they appeared on the local television program *AM Buffalo*. After the show I asked the Hunters about the people who are devout in their faith, yet who are not cured of their illnesses. I asked them what this might do to someone's faith, self-esteem, and belief. Charles Hunter looked at me and said simply, "I don't know." I wondered if he had ever thought about it before.

My take on the history of CSICOP probably wouldn't be complete without at least some mention of "psychic" Uri Geller. For a period of several years in the 1990s it seemed that a great deal of my time was spent dealing with lawsuits filed (Geller was suing CSICOP and James Randi for statements made by Randi which called into question Geller's alleged paranormal abilities), or lawsuits threatened, or numerous scare-tactic letters arriving from various lawyers from around the world or some other form of puff and bluster which to me seemed like a desperate attempt to recapture faded glory, or at least to make himself feel important again. I always found this somewhat ironic because of my decision years earlier to avoid law as a career. I remember that the one time I met Geller was at our lawyer's office in Washington, D.C., where Paul Kurtz had been called for a deposition. We met Geller in the hallway where he was very personable and attempted to be charming. He stuck out his hand and said, "I'm Uri Geller and it is a pleasure to meet you." I refused to shake his hand and basically tried to ignore him. He became agitated and stated something *to the effect that the difference between us was that he could still be a nice guy and did not take any of this personally*. I responded that the difference between us was that he was suing us and we weren't suing him, which to me was personal. Eventually CSICOP won all of the lawsuits brought against us and managed to recover some of our legal costs as sanctions imposed upon Geller by the court. I often find myself wondering what he tells his children about his "powers."

When you consider the body of knowledge that is the SKEPTICAL INQUIRER magazine and the Fellows and consultants who make up the committee, it is certainly impressive. Recently we conducted a rough tally of the number of events such as conferences, workshops, or seminars we had sponsored over the years and it was well into the hundreds. As public relations director for CSICOP for many years, and now executive director, I know that we would get between six hundred and eight hundred media calls each year from around the world. We try our best to supply journalists with the best experts on the subjects they are considering, or the best reference articles from the SKEPTICAL INQUIRER or



another source. But it is also true that we receive probably several times as many calls and requests from members of the general public for information on a vast array of topics. From schoolchildren writing a paper on UFOs to people with a sincere belief that their houses are haunted, we run the gamut of topics and try to help whenever we can.

I say this often and I believe it totally—I am amazed at the amount of information and effort that flows in and out of our little building each day. I have file cabinets and boxes filled with the tens of thousands of requests we receive for help and information. It is probably one of the most unappreciated roles that CSICOP plays in the world.

Perhaps I shouldn't actually say "little building" anymore. Because of the vision and hard work of many people we now have a much nicer headquarters (the Center for Inquiry) than in those early days and it seems we are doing more than ever before. It is still appalling to see how much more we have to do. Quite a bit of my time these days seems to be taken up by office mechanics, such things as publishing contracts, bids on new telecom systems, computer upgrades, legal issues, and the like. It is a sign, of course, of a maturing and permanent organization. It is very satisfying to realize that CSICOP will continue for a long time. Several years ago, I don't think I could have made that claim. We were always flying by the seat of our pants and really did survive on a day-to-day basis. On the other hand, I kind of long for the times when I personally could take time to ponder the latest UFO claim from Russia, or go out on a ghost hunt. Although I did get to take part in my first firewalk recently, these opportunities seem too few and far between.

As I travel around from city to city and country to country I am always impressed how belief in superstition, the paranormal, and fringe-science claims; untested alternative medical treatments; and antiscience and pseudoscience are part of a global phenomenon. The particular belief or the pseudoscience may be different in each country but the need for a skeptical response is vital. In 1980 in the back of the *SKEPTICAL INQUIRER* we listed a grand total of nine groups of skeptics from around the world with which we cooperated. Today we list well over a hundred with several others currently in various stages of formation. CSICOP constantly has someone on the road visiting groups, attending international events, sending out reader surveys, working the phones, and writing letters and e-mails. Over the years I have been to many places across the United States, as well as visiting probably twenty other countries. It is generally fun, and always stimulating. It is also true that on many occasions the trip can be summarized as get on the plane, go to hotel, attend three days of lectures and workshops, go to the airport and get on the plane. In my experience the hotel I stayed at in Madrid, Spain, looks an awful lot like the one I stayed at in Tucson, Arizona. This has been hard work. But it is work that is important and necessary. We act as the international hub for a growing network of men and women who believe in science and the use of reason and critical thinking skills in examining claims.

Think of the vast worldwide media companies whose only motivation is profit and market share. They have virtually no interest in telling things like they are, or presenting paranormal and fringe science from a skeptical perspective. The paranormal is entertainment and the paranormal sells. It does seem odd to think that as a twenty-five-year-old organization we've now got more work to do than at any other time in our history. Truly, and somewhat sadly, there never really is a dull moment.

Many of us are familiar with the names of the heroes of CSICOP. People like Paul Kurtz, Ray Hyman, Martin Gardner, Ken Frazier, Carl Sagan, Isaac Asimov, Stephen Jay Gould, Philip Klass, James Randi, Richard Dawkins, Joe Nickell, and others. I think there is a group of people who are unsung and deserve a world of thanks for the work they have done for the organization. These people include Mary Rose Hays, the first business manager of CSICOP who really kept it going during those lean, dark days. Doris Doyle, managing editor of the *SKEPTICAL INQUIRER* for so many years. The day for Doris must have had forty-eight hours in it. She seemed to work full-time for CSICOP even though her real job was at Prometheus Books. Doris was an absolutely delightful and totally wonderful person. One of the hardest-working people I ever saw was Alfreda Pidgeon. She would do whatever you asked of her and do it perfectly. She retired from our staff at the age of eighty-three. I used to tell her that I wished I could clone her and have several of her working for us at the same time. Vance Vigrass has been with CSICOP since almost the very beginning. He has literally kept some of our offices and machines working by duct tape and force of will alone. Paul Paulin is also a truly remarkable staff person as well. My hope is that we will be able to keep him on staff until he is eighty-three.

I also think Paul Kurtz is far too much an underappreciated and unsung hero as well. He is the founder of CSICOP and you know him by his writings, his speeches, and his media appearances. But so much of what he does is behind the scenes. You really cannot appreciate him until you see how much effort and dedication he puts into this organization. He works harder than anyone his age, half his age, a quarter of his age, etc. I can't keep up with him. I wish we could clone him as well. (I think we'll keep a bit of Paul Kurtz DNA locked up in the CSICOP archives just in case.)

Earlier in this article I mentioned that going along to China with the CSICOP team was probably the second-biggest thrill I have ever received from working at CSICOP. The biggest, by far and without question, is that I met my wife, Chris, when she was a graphic designer doing much of the production work on the *SKEPTICAL INQUIRER*. Chris and I were married on 9/9/99 (so I could remember the date) and we now have a beautiful baby daughter and another now on the way. I owe CSICOP quite a lot, but I do try to pay it back a little bit every day. □

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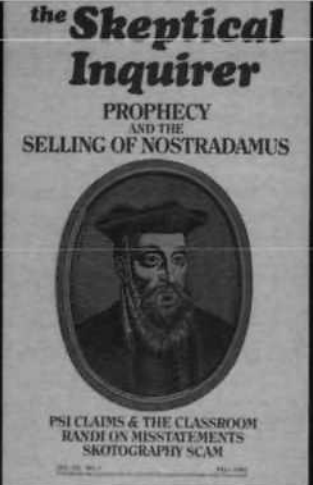
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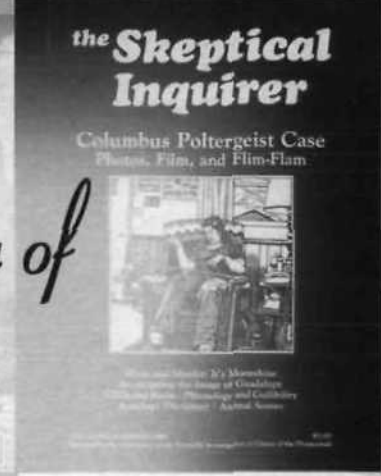
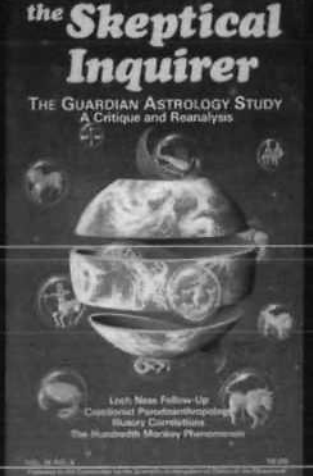
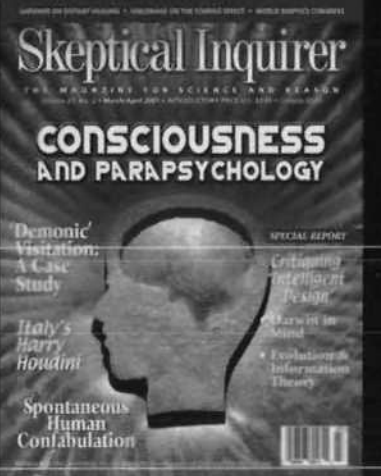
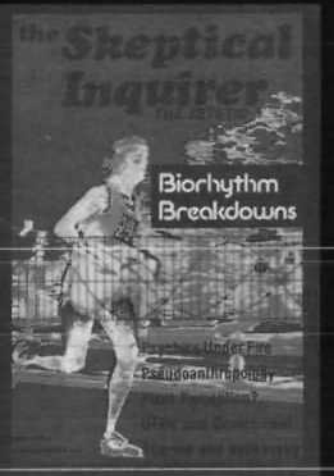
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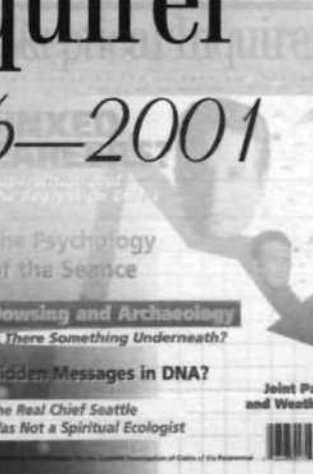
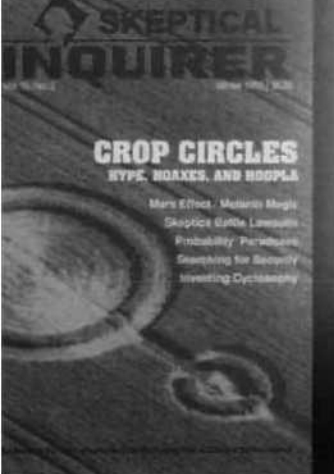
Receptiveness



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*A Quarter Century of*  
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# How Memory Doesn't Work Perfectly

TERENCE HINES

*The Seven Sins of Memory: How the Mind Forgets and Remembers.* By Daniel L. Schacter. Houghton Mifflin, Co., Boston, Mass. 2001. ISBN 0-618-04019-6. 272 pp. Hardback, \$25.

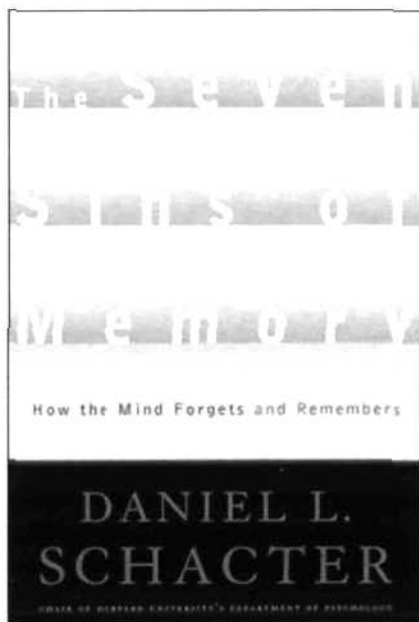
Human memory plays a major role in many of the issues discussed in this magazine. For many paranormal and related ideas, the only real evidence comes from people's memories. In the case of UFOs, much of the evidence—other than some grainy or faked photos—comes from people's memories of what they saw in the sky or, more dramatically, of being abducted. Similarly, there is no physical evidence whatsoever for the reality of a nationwide ring of Satanic ritual abusers. The evidence there comes from memories of the alleged victims. A very similar issue arises in the case of recovered repressed memories.

In all these instances, the basic issue is the reliability of memory and the effects of procedures like hypnosis on memory. In other paranormal claims, the role of memory is not so central, but it is still important. People continue to believe in such things as astrology, biorhythm theory, the prophetic nature of dreams, and the prophetic abilities of psychics because they selectively remember instances when their beliefs were confirmed, while tending to forget disconfirming instances. Because of its centrality in helping to maintain so many invalid beliefs, an understanding of how memory works, and when and why it

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fails, is important for skeptics.

The study of memory is a highly technical field and there are hundreds of books written by and for researchers in the field, as well as numerous textbooks. Few, if any, of these provide the kind of concise overview that would be useful to readers of this magazine. Now, happily,



Daniel Schacter has provided a wonderful book that provides exactly the summary of recent research on memory that is needed. Schacter is chairman of the psychology department at Harvard and one of the leading, and most creative, researchers in human memory.

The focus of this book is the ways in

which memory doesn't always work perfectly. These are the "seven sins" in the title.

The seven are: transience, absent-mindedness, blocking, misattribution, suggestibility, bias, and persistence. Transience refers to the fact that we forget things over time. Absent-mindedness, on the other hand, refers to the type of memory failure that occurs when we, for example, put our glasses down somewhere unusual without really thinking about it and, some time later, can't find the damn things! Blocking is the frustrating phenomena of knowing that we know something, but being unable to pull it out of memory. Often it pops to mind all by itself later when the information is totally useless. Misattribution is the mixing of different aspects of memory. Schacter gives a chilling example—a rape victim identified as her attacker a psychologist who had been, at the moment of rape, giving a live interview on TV. The victim had been watching the show and had mixed the face of the real attacker with that of the person she had just been watching on TV. The sin of suggestibility is the one most often involved in such things as claims of UFO abductions and recovered memories of sexual abuse. The sin of bias encompasses several phenomena, all of which serve to introduce errors into memory. The example given above of people believing in astrology because

they selectively remember astrological predictions that "come true" belongs in the bias category. Finally, the sin of persistence refers to the fact that memories of traumatic events, far from being repressed, are often very difficult to keep out of one's mind.

For each sin, Schacter provides a lucid, entertaining, and up-to-date review of the relevant research, along with plenty of informative examples. In the final chapter "The seven sins: Vices or virtues?" Schacter compellingly argues that the seven sins are, in fact, "byproducts of otherwise adaptive features of memory, a price we pay for processes and functions that serve us well in many respects" (184). As one example, consider the sin of persistence. A memory system that really did repress

memories of traumatic events would be most maladaptive. If an ancestor of mine repressed the memory of being attacked by, but escaping from, a saber-toothed tiger when he unknowingly ventured too near the tiger's lair, he would be likely to return to the spot again. And I wouldn't be sitting at my computer right now typing this review.

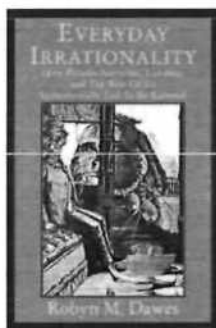
Schacter's book is by far the best popular book on memory I have ever read. It will be very useful for anyone who wants to know more about both why memory works the way it does and why, sometimes, it doesn't work. The book would make an excellent adjunct text in any college course on memory. It is very well referenced so that the interested reader can find the original scientific papers Schacter discusses.

mode also works well inasmuch as it is sensitive to associations that actually exist in the world. However, intuition guarantees that at least on occasion some incoherence will occur.

Consider two examples, first the common tendency to judge the truth of a claim by one's familiarity with it. This may sound like a good idea. All we need to assume is that by and large beliefs are corrected by evidence, so that false beliefs are more likely to be weeded out than correct beliefs. Therefore, true statements should be encountered more often than false statements. Intuitive thinking takes advantage of this association and assumes that familiar statements are more credible than unfamiliar ones. Why is it irrational to rely on familiarity as a sign of truth? Because of its imperfection, the association can be systematically exploited. Advertisers know that they can boost the appeal of their claims simply by repeating them. In a culture awash in "information," many conflicting claims become familiar when only some of them can be true. To believe them all or to believe many without further checking is irrational.

The second example is the assumption that in an inert world, the past tends to predict the future. Again, this is not a bad idea. It is safe to say, for example, that mediums and charlatans will continue to sell old wine in new bottles until they are debunked yet again. In the realm of action, people learn to expect that efforts already expended and investments already made tend to pay off in the future. Yet, these expectations become irrational when the link between the past and the future is cut. Some holders of sports season tickets, for example, go to a game even on days when they would rather stay home. These individuals already know what they want. But by honoring their irretrievable past investments, they act as if these investments still foretold future benefits. Doing what they prefer not to do, they admit incoherence and thus irrationality.

Dawes offers many entertaining and distressing examples of runaway intuitions.



## Let's Be Rational

JOACHIM KRUEGER

*Everyday Irrationality: How Pseudo-scientists, Lunatics, and the Rest of Us Systematically Fail to Think Rationally.* By Robyn M. Dawes. Westview Press, Boulder, Colorado, 2001. ISBN 0-8133-6552-X. Hardcover, \$25.

Readers of the SKEPTICAL INQUIRER regularly see irrational beliefs demolished by evidence and argument. Communication with the dead and the existence of aliens are recurring favorites. The primary objections to such beliefs are that they are false, that they can do harm, and that they keep cropping up in spite of it all. Debunkers usually emphasize the lack of evidence for these beliefs (or the existence of evidence *against* them) and they plumb the psychological mechanisms supporting the maintenance of these beliefs.

In his latest book, *Everyday Irration-*

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*ality*, Robyn Dawes takes a slightly different tack by defining *rationality* as the coherence of related beliefs. According to his definition, beliefs are irrational if they lead to outright contradictions. Although evidential support and beneficial consequences remain important aspects of rational thought, coherence is the paramount criterion.

Dawes's book is the fruit of a revolution that occurred in cognitive psychology over the last three decades. Cognitive psychologists now distinguish two modes of thought. Thinking in the intuitive mode is swift, effortless, and associative, whereas thinking in the rational mode takes time and effort. Rational thinking often requires the application of specific rules so that a problem can be "thought through" and contradictions avoided. The intuitive

The crux of his argument is a moral one, namely his conviction that the world would be a better place if we made the effort to think coherently. Professionals in particular, who render judgments in their areas of expertise, cannot justify their reliance on intuition and mental shortcuts. Instead of thinking in terms of association, they could and should think in terms of comparison. Take medical diagnosis as an example. Suppose it is known that many people who have a certain disease also display a particular symptom. Should one now conclude that a person with this symptom has the disease? The answer is no. It is essential to compare the prevalence of the symptom among people with this particular disease with its prevalence among other people, be they healthy or differently diseased. The same logic suggests that you are not necessarily depressed if you have trouble sleeping. There are other potential causes of insomnia.

Still, to condemn associative intuition in its entirety seems a bit harsh. Intuitive inferences are, after all, often correct. The question is how we know when to replace easy intuition with effortful, rational, and comparative thinking. Does this not mean that the choice between the two modes of thinking must be made at a higher, executive level? Cognitive psychologists have not solved the riddle of the executive, and Dawes wisely does not confront this question directly. Instead, he pragmatically suggests that certain groups of professionals (especially from the mental health field) should be taken to task for relying too much on easy intuitions. As trained experts, they should know better. Still, that leaves a question for the rest of us—or all of us thinking about all those areas of life in which we have no expertise. Are we all fools and lunatics? By implying that we are, Dawes denies us a kind of comparison that tends to make us feel good.

there who would witness his second coming—then there must be a Jew or Jews who are alive today who were alive when Jesus uttered these words—wandering and waiting for his second coming. Gardner relates the different wanderings this myth has taken through the ages.

Another essay is entitled “The Incredible Flimflams of Margaret Rowen.” Margaret Rowen claimed to be the God-chosen successor to Ellen White, the Adventist leader and prophet. Gardner adeptly reveals her claims to be false and she a liar and con artist. The sad story of Bert Fullmer, a long-time believer and proponent of Margaret Rowen, is the central character in a related but different essay. Fullmer defended Rowen only to be shown as a complete fool—something he realized toward the end of his misled life. A third essay dealing with Margaret Rowen is “The Comic Pratfalls of Robert Reidt.” Reidt led a little band of Rowenite disciples in Long Island, New York. He led them to believe Rowen’s date of February 6, 1925, was the real date for Jesus’ second coming. Since Jesus didn’t show, he then predicted September of 1925. Since Jesus didn’t show then either, he then predicted New York City would be destroyed by fire from heaven on February 6, 1926. Nothing happened on February 6, 1926, in New York City—well, that is, there was no fire from heaven. Reidt then predicted the fire would hit the city in the early morning hours of February 12. It didn’t, and Reidt faded into obscurity.

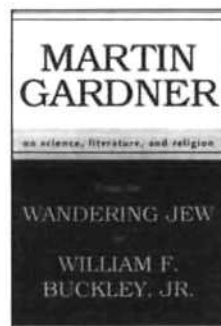
The final three essays are not about religious belief but literature. One deals with *John Martin’s Book*, a forgotten children’s magazine. Another is about L. Frank Baum, the author of the *Oz* books, and the final one is about Hugo Gernsback, the father of American science fiction. I’m glad the impulse seized Martin Gardner to “sound off about [these] topics” also.

The reviews of books are all very enjoyable and educational. The topics

## Lucid Commentaries with Something to Say

MARK DURM

*From the Wandering Jew to William F. Buckley, Jr.* By Martin Gardner. Prometheus Books, Amherst, New York. 2000. ISBN 1-57392-852-6. 350 pp. Hardback, \$27.



“From time to time, when the impulse sizes me, I sound off about topics of interest to me, and respond to requests for book reviews if I think I have something significant to say about a book.”

So begins Martin Gardner in this book, his latest of many. We, the readers, should always be thankful when Gardner “sounds off” on topics and has “something significant to say” about any book. Gardner’s lucid style, eloquent wit, and carefully researched

*Mark Durm is a professor of psychology at Athens State University, Athens, Alabama.*

writings makes him one of America’s foremost essayists. In this latest offering of essays and book reviews, Gardner explains that “the topics of this rambling anthology are mainly attacks on bogus science and what I regard as religious superstition.”

Why does the Jew wander? Because Jesus says in Matthew 16:27, 28 “Verily I say unto you, There be some standing here, which shall not taste of death, till they see the Son of man coming in his kingdom.” To Bible fundamentalists, everything in the Bible must be literally true—therefore, if Jesus said there were “some standing”

run the gamut from physics to reincarnation, to crystal balls, to Jim and Tammy Faye Bakker, to Christian Science, to the meme (which is supposedly anything humans do or say that is not genetically determined but is transferred from person to person by imitation), to *The Scarecrow of Oz*, and finally to the surprisingly very fundamentalist faith of William F. Buckley, Jr. There are nineteen of them, and when Gardner writes a book review he does have "something significant to

say" and each is much more than just a review. He tends to give a biographical sketch of the author, events surrounding the publishing of the book, and a thoroughly researched commentary that gives the review a breath of life.

Even though some information is repetitive (understandable since these essays and book reviews were originally written at different times for different publications), this latest book from Martin Gardner is a good read.

newspaper account of the time, and described the man/beast in detail. The Wilsons conclude, "Regrettably, Jacko's subsequent fate is unknown..." They are apparently unaware of John Green's archival research clearly demonstrating that the story was a hoax. (The omission is especially puzzling as the Wilsons cite Green just two paragraphs later.)

• On the following page, the story that Albert Ostman told about being kidnapped by a Bigfoot family is related. According to the Wilsons, Ostman "spent six days in their company until, choosing his moment, he fired off his rifle. While his captors dived for cover, Ostman escaped." Yet a quick check of Ostman's original account gives a somewhat different version. In it, Ostman tricks his Bigfoot captor into eating a box full of snuff tobacco, which makes the creature very sick: "[The Bigfoot's] eyes began to roll over in his head, he was looking straight up. . . . He stuck his head between his legs and rolled forwards a few times away from me. Then he began to squeal like a stuck pig" (*On the Track of Sasquatch*, 1968, p.20). It was only then that Ostman grabbed his rifle, and he makes no mention of his captors "diving for cover."

• The errors continue on still the following page. Regarding the famous Patterson Bigfoot film and its subject, the authors write, "... zoologist Ivan Sanderson quotes three scientists, Dr. Osman Hill, Dr. John Napier and Dr. Joseph Raight, all of whom seem to agree that there is nothing in the film that leads them . . . to suspect a hoax." This is curious considering that Napier came to exactly the opposite conclusion in his book *Bigfoot* (1973): "[T]here is little doubt that the scientific evidence taken collectively points to a hoax of some kind."

In other cases the authors seem blissfully unaware that their "unsolved" mysteries have in fact been solved. Take

*A MAMMOTH ENCYCLOPEDIA  
UNSOLVING MYSTERIES  
Continued on page 67*



## A Mammoth Encyclopedia Unsolving Mysteries

BENJAMIN RADFORD

*The Mammoth Encyclopedia of the Unsolved.* By Colin Wilson and Damon Wilson. Carroll & Graf, New York, 2000. ISBN 0-7867-0793-3. 662 pages. Softcover, \$12.95.

As I read through *The Mammoth Encyclopedia of the Unsolved*, a quote from L. Sprague de Camp about the works of Erich von Däniken came to mind. De Camp wrote that Von Däniken's books are "solid masses of misstatements, errors, and wild guesses presented as facts, unsupported by anything remotely resembling scientific data." Though desiring to refute Von Däniken's arguments, de Camp realized that a thorough analysis would "take years of my time; and, if I were mad enough to write it, who would read it?"

Though the Wilsons' encyclopedia isn't quite "solid masses of misstatements," they do appear with alarming and puzzling regularity. The book is riddled with errors and obfuscating omissions, betraying a bizarre disregard for accuracy. I'm not attacking the book based on philosophy; one may disagree with their approach and conclusions, but the Wilsons simply get basic facts wrong. One wonders how solid

the Wilsons' conclusions can be given such sloppy research.

Though the tome is dubbed an encyclopedia it is really nothing of the sort, as encyclopedia implies comprehensiveness, and there are dozens of "unsolved" subjects missing from the book. It is instead a rehash of older material culled from the authors' previous books of familiar mysteries: UFOs, Bigfoot, curses, etc. Not all of the book is devoted to paranormal topics, and there are chapters on Jack the Ripper, Shakespeare, and the subject of Leonardo's Mona Lisa. This is as it should be; as skeptics point out, not everything that is unsolved is necessarily paranormal.

Confronted with the wide array of subjects, I began with an entry on a topic I happen to be familiar with: Bigfoot. As I read, I found it hard to go more than about half a page before stumbling over flawed facts. I'll present only three from the first few pages:

• On page 67, the authors briefly discuss the "Jacko" incident, in which a Bigfoot was allegedly captured in a British Columbia town in 1884. Information on the event came from a

*Benjamin Radford is Managing Editor of the SKEPTICAL INQUIRER.*

*Listing does not preclude future review.*

**Arizona Myths, Fallacies, and Misconceptions: The Truth Behind Hundreds of Common Misbeliefs about the Grand Canyon State.** John D. Neuner. First Leaf Publishing, 28248 N. Tatum Blvd., B-1, #607, Cave Creek, AZ 85331. 2001. ISBN 0-9669945-2-3. 128 pp. Softcover, \$9.95. An entertaining book filled with short descriptions of myths, fallacies, misinformation, and urban legends about the plants, animals, people, places, politics, and weather of the state of Arizona. The author limits it to those that can be easily disproved, avoiding issues subject to personal opinion, religion, or the paranormal.

**Postmodern Pooh.** Frederick Crews. Farrar, Straus, and Giroux, 19 Union Square West, New York, NY 10003. 2002. ISBN 0-86547-626-8. 175 pp. Softcover, \$22. A sequel of sorts to Crews's surprise best-selling parody of academic literary criticism of thirty-seven years ago, *The Pooh Perplex*. Crews, emeritus professor of English at Berkeley and a CSICOP Fellow, here contributes a new satire in the same vein. Purporting to be the proceedings of a forum on Pooh convened at a convention of the Modern Language Association, *Postmodern Pooh* parodies the academic fads and figures that hold sway at the millennium. These include deconstruction, poststructuralist Marxism, new historicism, radical feminism, cultural studies, recovered-memory theory, and postcolonialism, among others.

**Skeptical Odysseys: Personal Accounts By the World's Leading Paranormal Inquirers.** Edited by Paul Kurtz. Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2001. ISBN 1-57392-884-4. 430 pp.

Hardcover, \$27. To celebrate the 25th anniversary of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), founding chairman Paul Kurtz invited thirty-seven of the world's leading skeptics to write original essays or chapters. Some pieces are autobiographical; others report on the current state of research into paranormal and fringe-science claims. Five comprising the first section, "Twenty-Five Years of CSICOP," have appeared in the *SKEPTICAL INQUIRER* this year (the final two in this issue) as part of its observance of CSICOP and SI's 25th anniversary. The eleven other sections are on parapsychology (Susan Blackmore, Leon Jaroff, Barry Beyerstein), UFOs (Philip J. Klass, Robert Sheaffer, Bill Nye, Gary Posner), Astronomy and the Space Age (David Morrison, Neil deGrasse Tyson), Astrology (Geoffrey Dean, Ivan Kelly, Jean-Claude Pecker), Popular Investigations (Joe Nickell, Henry Gordon), Creationism (Eugenie Scott), Alternative Medicine (Wallace Sampson), Skepticism Around the World (Cornelis de Jager, Jan Willem Nienhuys, Massimo Polidoro, Mario Mendez-Acosta, Valerii Kuvakin, Sanal Edamuruku, Luis Alfonso Gámez), Some Personal Reflections (Vern Bullough, Michael Shermer, Steve Allen, Béla Scheiber), Religion (Martin Gardner, Victor Stenger, Antony Flew, David Thomas), and from Skepticism to Humanism (Robert Baker).

**Tales of the Rational: Skeptical Essays About Nature and Science.** Massimo Pigliucci. Freethought Press, an imprint of Atlanta Freethought Society, P.O. Box 813392, Smyrna, GA 30081-8392. 2000. ISBN 1-887392-11-4. 255 pp. Softcover, \$17. A scientific and philosophical inquiry into a variety of scientific and pseudoscientific claims. Pigliucci, a professor of ecology

and evolution (University of Tennessee), discusses philosophical issues concerning the way we can know and understand reality and the complexities of the relationship between science and religion, all from the viewpoint of a thoughtful, well-informed scientist who has journeyed from mild Catholicism to agnosticism to atheism. He discusses creationism and theism and provides accounts of his debates with two of the major figures of so-called scientific creationism. He also examines the search for the origins of life, for extraterrestrial life, and chaos theory.

**Turning Numbers into Knowledge: Mastering the Art of Problem Solving.** Jonathan G. Koomey. Analytics Press, P.O. Box 20313, Oakland, CA 94620-0313. 2001. ISBN 0-9706019-0-5. 221 pp. Hardcover, \$34.95. A lively, well-written, attractively packaged book on the art of critical thinking. Koomey, a staff scientist at Lawrence Berkeley National Laboratory, wrote the book as a guide for training analysts of all sorts in assessing the glut of information the modern world inflicts upon us. In a variety of short chapters illustrated by cartoons and original drawings (computer art by Tom Chen), Koomey shows how to use information, recognize the importance of ideology, learn the art of story telling, and distinguish between facts and values. Koomey says there is an art to such analysis that isn't often taught at even the top universities, but knowing and using these practical "tricks of the trade" can make for success in academia and business. Chapters of special interest to SI readers include "The Power of Critical Thinking," "Question Authority," "Don't Believe Everything You Read," and "Use the Internet."

—Kendrick Frazier

## STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (Required by 39 U.S.C. 3685)

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## ARTICLES OF NOTE

Hines, Terence M. "The G-spot: A Modern Gynecologic Myth." *American Journal of Obstetrics and Gynecology* 185: 359–62, August 2001. Since the concept of the G-spot—an alleged specific anatomical and highly erogenous area in the human vagina—first appeared in a popular book in 1982, the existence of the spot has become widely accepted, especially by the general public. A psychology professor here reviews the behavioral, biochemical, and anatomic evidence for the reality of the G-spot. He finds the widespread acceptance of the reality of the G-spot "goes well beyond the available evidence." He calls the G-spot "a sort of gynecologic UFO: much searched for, much discussed, but unverified by objective means." (Hines says he will provide copies of the article to requesters: Psychology Dept.,

Pace University, Pleasantville, NY 10570-2799 or thines@pace.edu.)

Garreau, Joel. "Science's Mything Links: As the Boundaries of Reality Expand, Our Thinking Seems to be Going Over the Edge." *Washington Post*, July 23, 2001, pp. C01. By thinking creatively, scientists have made more discoveries in the past forty years than in the past 5,000. But is it possible, as Garreau proposes, "that we've thought outside of the box so often that we forget why we ever...had a box at all—a reality model?" Seemingly respected scientists (from the late Carl Sagan to physics professor Ray Kurzweil) "are finding it increasingly difficult to separate miracles, magic, myths, and madness." Where do we draw the line between science and pseudo-

science? "Has reality simply become a matter of taste?"

Lilienfeld, Scott, Jeffrey M. Lohr, and Dean Morier. "The Teaching of Courses in the Science and Pseudoscience of Psychology: Useful Resources." *Teaching of Psychology*, 28(3): 182–191, 2001. In an effort to curb pseudoscientific beliefs and teach critical thinking among psychology undergraduate students, the authors provide "useful resources . . . ways of educating students about the differences between science and pseudoscience." Among the resources are a syllabus for related courses, a suggested list of related texts and videos, and relevant Web sites.

—Jodi Chapman and Kendrick Frazier

# SCIENCE BEST SELLERS

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1

### **Fire**

Sebastian Junger  
W.W. Norton & Co.

2

### **Germs: Biological Weapons and America's Secret War**

Judith Miller, et al.  
Simon & Schuster

3

### **Mammoth: The Resurrection of an Ice Age Giant**

Richard Stone  
Perseus Books

4

### **The Map that Changed the World: William Smith and the Birth of Modern Geology**

Simon Winchester  
HarperCollins

5

### **The Best American Science & Nature Writing 2001**

Burkhard Bilger, Edward O. Wilson  
(Editor)  
Houghton Mifflin Co.

6

### **Cliffs Ap Biology**

Phillip E. Pack  
Hungry Minds, Inc.

7

### **Three Roads to Quantum Gravity**

Lee Smolin  
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8

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Steven Johnson  
Scribner

9

### **The Secret Life of Dust: From the Cosmos to the Kitchen Counter, the Big Consequences of Little Things**

Hannah Holmes  
John Wiley & Sons

10

### **Living Terrors: What America Needs to Know to Survive the Coming Bioterrorist Catastrophe**

Michael T. Osterholm, John Schwartz  
Dell Publishing

By arrangement with Amazon.com, September 2001.

# The Shield of the Open Mind

GARRETT G. FAGAN

One of the most common appeals in pseudoscientific works is for the reader to maintain an “open mind” about the claims presented. Recently, while taking part in discussions on the Web page of prominent pseudo-historian Graham Hancock—who sells Atlantean fictions slightly repackaged for the modern age—I encountered the effects of this appeal on those who support Hancock’s “alternative history” of humankind’s deep past (see [www.grahamhancock.com/phorum](http://www.grahamhancock.com/phorum)). On this site, CSICOP comes under heavy fire as a conspiracy of academics out to suppress “new” or “alternative” thinking, and I think it is fair to say that the attitudes of the faithful at this site share many similarities with those who propound the “truth” of astrology, UFOs, psi factors, and other paranormal flim-flam off all sorts. In my encounters with the “open-minded” at Hancock’s Web site I determined that, in reality, the appeal to have an open mind functions as a shield to insulate “alternative” beliefs entirely from critical analysis. It does so on several levels.

The first and most obvious level is that believers, by virtue of having open minds, classify their critics as having closed ones. The critics’ assaults can therefore be readily dismissed as narrowly focused and mean-spirited. They just can’t see as far as the open-minded. They are mired in old and outmoded ways of thinking, married to narrow visions of reality, and their endless

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demands for proof and/or evidence are nit-picking and rather irritating. For many believers, this is enough. They can turn away in all good conscience, shake their heads at the skeptics’ closed minds, and move on.

But for those believers who engage more closely in a debate with a skeptic, the Shield of the Open Mind offers deeper levels of protection. For the open mind, no possibility is off the table. Any conceivable possibility can be proffered to explain away a difficult objection or a body of countervailing data. It does not matter that there is no evidence for the possibility, since requirements of evidence are for the closed mind. When, for instance, it is pointed out to Hancock or his followers that there is no physical evidence whatsoever for the 12,000-year-old Lost Civilization they are proposing, they reply that all the evidence could be under the sea.

They have no substantiation for this assertion, they are unconcerned by its inherent implausibility (how likely is it that *all* the pertinent evidence is under the sea?), and they do not mind that it contradicts other parts of their case.

They claim, for instance, that one of the highest archaeological sites in the world, Tiwanaku in Bolivia, which is over 12,000 feet above sea level, was built by their Lost Civilization. Tiwanaku is not under the sea, nor could it have ever been. Never mind. For the open mind the mere possibility that most of the evidence lies unfound under the sea is a good enough. It is closed-minded to think otherwise.

Even when the argument runs deeper,

the Shield of the Open Mind allows a pseudoscientist to argue about what constitutes evidence itself, the very stuff of rational argument. The open-minded readily promote speculations to the level of evidence. A classic example in Hancock’s arsenal is the argument from star alignments to “prove” the existence of the Lost Civilization. This “method” proposes, for instance, that three of the Egyptian pyramids at Giza align with the three belt stars in the constellation Orion as those stars lay in the sky in 10,500 B.C., some 8,000 years before the pyramids were built. The alignment can therefore be adduced as “evidence” for the Lost Civilization, which master-planned the site in the remote past.

Si potest esse,  
est.



But there are at least sixteen stars in the Orion constellation; why “map” only three with pyramids? There are over eighty pyramids in Egypt; why do no others map constellations? We have hundreds of other types of monuments from ancient Egypt (cities, temples, tombs, palaces); why do none of them “map” constellations, if such was the order of the day in siting Egyptian architecture? We have abundant inscriptions from the Egyptians telling us about their construction of monuments; why is there not a word in them about monumental star maps? Could the alignment with Orion’s belt be coincidence? Could it reflect the proponents’ ability to discern patterns more than the intentions of the

ancient builders?

But such objections are deemed pedantic and small-minded. The classic response is, “You have your evidence and I have mine.” The Shield of the Open Mind swings into action: what constitutes evidence is a matter of opinion; one must keep an open mind on what to consider evidence.

Finally, the Shield serves a sociological function. It helps bind the community of the open-minded together. They can congratulate themselves endlessly on their openmindedness and circle the wagons at the first sign of a skeptical attack. On this level, then, the Shield of the Open Mind is the glue of a pseudo-

scientific community. It is analogous to the appeal to maintain raw faith in religious doctrines, a faith that insulates those doctrines from logical scrutiny. The pseudoscientific appeal to “have an open mind” is really a call to abandon one’s critical faculties entirely, to consider all possibilities as valid, to leave “open” what can be considered evidence in making a case, and to join the community of the enlightened in the great struggle against the narrow-minded academics and scientists. It is, in this respect, a pernicious doctrine. As the saying goes, “By all means maintain an open mind, but not so open that your brain falls out.” □

*A MAMMOTH ENCYCLOPEDIA  
UNSOLVING MYSTERIES  
from page 63*

chapter 14, “The Dogon and the Ancient Astronauts,” for example. This “Sirius mystery” has been explained and debunked not only in several SKEPTICAL INQUIRER articles (see, for example, “Dogon and the Dog Star” 4[2]112; “The Dogon People Revisited” 20 [6]39–42) but even in the somewhat less skeptical *Fortean Times* (140, 30–31).

Even the old Bermuda Triangle “mystery” is rehashed, along with the disappearance of Flight 19. Though the Wilsons have (presumably) read skeptical books on the topic, they repeat many errors, including that the doomed Flight 19 pilots said, “Everything is wrong. . . . Even the ocean doesn’t look as it should.” (Larry Kusche, author of *The Bermuda Triangle Mystery—Solved*, studied transcripts of the pilots’ transmission and notes, “The strange quotations attributed to the pilots. . . do not appear in the Navy report . . .” [p.126].)

The Wilsons take a swipe at writers such as Kusche, writing, “the ‘simplistic’ explanations of the problem— all those books explaining that the mystery . . . is a journalistic invention—are not only superficial but dangerous. They discourage the investigation of what could be

one of the most interesting scientific enigmas of our time.” While the Wilsons attack well-researched books like Kusche’s, they admit that one of the most popular and seminal books on the topic, Charles Berlitz’s *The Bermuda Triangle*, is “low on scholarly precision.”

Skeptics are acknowledged, with the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) mentioned over the course of six introductory pages. CSICOP is described as “a defensive league” of American scientists whose “basic aim is to argue that the ‘paranormal’ does not exist, and is an invention of ‘cranks’ and ‘pseudos.’” This (mischaracterized) position is described as untenable and a kind of “wilful blindness.” (The “wilful blindness” statement is particularly ironic.) The authors attack skepticism as dogmatic, and state that “A century ago, Darwin’s theory of evolution by natural selection was regarded as scientifically unshakable; today, most biologists have their reservations about it” (p. 4). As usual, the basis for this astounding (and inaccurate) claim is not revealed. The Wilsons go on to write that “the views of CSICOP should be treated with suspicion.”

The gaffes go on. Throughout the book, they repeatedly misspell their sources’ names (for example British neurologist John Lorber and Canadian eth-

nobotanist-cum-zombie researcher Wade Davis). If the Wilsons can’t even bother to get names spelled correctly, it’s not a good sign for the rest of their scholarship.

I could go on for pages with examples such as these, but, like de Camp, I have neither the time, space, nor inclination to do so. Both the authors and the publishers should be embarrassed at letting so many errors through—especially in a supposed reference book such as an encyclopedia (the spine quaintly categorizes the book as “history”). There are no references given—obviously because by providing them anyone could easily see just how shoddy their research is.

One possible explanation for the poor quality of the book is that it is simply out of date and the Wilsons only occasionally bothered to update cases or correct previous errors. Indeed, the authors’ preface states that “this book contains most of the chapters” from two earlier works. They mention this to explain to the lay reader why there is some overlap and repetition between chapters, but that “readers who read this book piecemeal will probably not notice them anyway.” Yet repetition is the least of the readers’ problems; it’s the incorrect facts and misleading conclusions the reader should be wary of. And, sadly, most lay readers probably won’t have the background to know how unreliable the book is. □

## Veterinary Medical Nonsense

As a veterinarian, I have always been proud of the fact that the coursework required for graduation from accredited veterinary colleges is one of the most rigorous and scientifically rooted curricula in all of academia.

It amazes me that some of my colleagues (thank God a very small percentage!) chose to turn off their critical thinking caps and accept some of the alternative medicine hogwash that is rampant in our culture ("Confronting Veterinary Medical Nonsense," July/August 2001). They should be ashamed of themselves for preying on the naive and gullible and for tainting our wonderful profession.

Keep up the good work, Dr. Imrie.

Michael D. Cross, D.V.M.  
Flint, Michigan



Robert Imrie's excellent article, "Confronting Veterinary Medical Nonsense," and the cartoon illustrating it, inspired me to verse:

They Met at the Vet

I'd like to know  
At what juncture  
The porcupine fell in love  
With the dog having acupuncture.

John W. Hill  
River Falls, Wisconsin

## Junk Science and the Law

As an addendum to John E. Dodes's important article ("Junk Science and the Law," July/August 2001) I recommend David L. Faigman's *Legal Alchemy: The Use and Misuse of Science in the Law* (1999, W.H. Freeman). Faigman considers the pernicious effects of scientific illiteracy in our court system, Congress, and the executive branch. He also describes barriers to the use of science in legal contexts. Dodes refers to "scientifically

illiterate judges and juries" and Faigman reports "fewer than 10 percent of all students attending law school have undergraduate degrees that require substantial math and science training." The U.S. Supreme Court lacks an appreciation of the importance of scientific method. As a result, empirical research has not been used with consistency or sophistication by the Court.

The picture is no brighter with respect to Congress. Although Faigman says that there have been no general studies of the legislative use of science, the fact that fewer than one percent of the members of Congress have any significant training in science is cause for concern. Furthermore, according to Faigman, Congress exhibits a shocking lack of interest about science, as illustrated by its decision to abolish the Office of Technology Assessment.

In contrast to the courts and Congress, the real instruments of science policy are the agencies of the executive branch. They do the real work of formulating and implementing science policy.

P.A. Lamal  
Charlotte, North Carolina

I was very much taken aback by John Dodes's "Junk Science and the Law." As a trial lawyer, former outstanding member of the Iowa Trial Lawyers Association, and author of a published book on evidence, I too am troubled by the *Daubert* rule, which at least in federal courts makes the judge the gatekeeper on the reliability of scientific and technical evidence. The *Daubert* rule replaces the *Frye* rule, which required that before scientific or technical evidence was admissible it had to be generally accepted in the relevant scientific or technical community. The article portrays lawyers, and those lawyers who are also judges, as scientific illiterates who often allow junk into the court because they don't understand the real science. It is a very cheap shot and puts the blame on the wrong part of the equation.

Let me start with the now-defunct *Frye* rule. General acceptance in the relevant scientific or technical community is no guarantee of scientific accuracy. When I was an undergraduate studying geology the generally accepted position of the scientific community was that the continents did not move. Those who thought the continents moved were on the fringe, and the opinions of those who relied on a belief in continental drift to explain their conclusions would not have been admissible in court. It is merely

hubris, and not very scientific, to conclude that truth rests with the general consensus of any group, even scientists.

What is argued in the Dodes article, however, reveals a basic misunderstanding of the legal process and is more profound than the criticism of *Daubert*. The claim is that as people untrained in technical fields, judges are misled by unscrupulous lawyers and charlatans "scientists" into accepting junk science into the courtroom. The system, however, is an adversarial one. The scrupulous lawyer and the real scientist are supposed to be able to make the judge see what is junk and what isn't so that only "good" science is admitted into evidence.

So what is the problem? I am afraid it is the hubris which Dodes's article itself exudes. I often need the expert witness services of engineers and geologists and the occasional archaeologist or biologist in my practice. I try to hire people who are in universities or well-regarded consulting firms with peer-reviewed publications under their belt who are not, and cannot be attacked as, fringe nuts. Most lawyers in my experience do the same within the constraints of their budgets. What I too often find are people who rely upon their credentials as a basis for opinion and explanatory authority and not their brains. You want to lose an argument, tell people you're right because you have an advanced degree, you've studied the problem, and you're right about it. That's not an explanation, it's not persuasive, and it won't keep the junk out of court.

The good expert witness who should and does triumph—and who along with a mildly attentive lawyer can and does keep junk out of court—is the one who can explain a complex problem in a reasonable and intelligent manner without talking down to anyone. The good expert doesn't think everyone else is illiterate. The good expert makes sense in English. The good expert arms the attorney with the questions needed to destroy the charlatan. The good lawyer knows how to move in advance of trial to exclude the junk. My favorite example of this was a Ph.D. private consulting geologist, who calmly pointed out at a pre-trial evidentiary hearing why the theory of the "expert" hired by a landowner whose land was next to a municipal water well field was wrong. He simply told the judge that for the "expert" on the other side to be right, water would have to naturally flow uphill. He then explained in nontechnical English the nonsense of the other theory. The other theory stayed out.

It is the job of the lawyer to prepare the

witness. In technical matters it is the job of the scientist or engineer to make sense, and not dismiss the rest of the world as unwashed illiterates. The attitude that scientists have the answers is always one that needs to be tested. Courts test the ability of an argument to stand up. Technical people too often seem distant, effete, imperious, and even pompous. Such people do not persuade.

I fear my comments are merely reflective of a larger problem continuously discussed in these pages. Junk science doesn't just appear in the courtroom. It permeates the newspapers and the popular culture. Rationalism needs to make its case better. The complaint about the *Frye* rule is merely a symptomatic example of one more place rational people need to make a better case.

Ivan T. Webber  
West Des Moines, Iowa

John Dodes's article demonstrates graphically the need for drastic tort reform in this country. Although opponents of tort reform claim that it would benefit powerful interests at the expense of the individual, Dodes cites a number of cases where the tort system has been used by the powerful to silence dissent or criticism. One case Dodes didn't mention was that of a company, that, for a fee, would name a star after someone. Such a practice is legal, of course, but has no official status. The company used the threat of a lawsuit to force a planetarium to stop discussing star naming in its lectures and even to remove all references from its Web site.

Although Dodes criticizes Justice Scalia for supporting creationism, most of the examples he cites in his article are causes backed by liberal activists, such as harassment by alternative medical care practitioners. To those cases we can add the shameful behavior of environmentalists and native rights activists in opposing observatories on Mauna Kea in Hawaii and Mount Graham in Arizona, and the suits that tried to halt the *Ulysses* and *Cassini* space probes because they used radioactive power sources. Clearly anti-intellectualism from the left is at least as dangerous as that from the right. Creationists may have a lot of grassroots support, but they won't succeed in palming themselves off as intellectually respectable the way observatory opponents and alternative medicine advocates have.

Steven I. Dutch  
Professor, Natural and Applied Sciences  
University of Wisconsin-Green Bay  
Green Bay, Wisconsin

John E. Dodes replies:

*Thanks to Peter Lamal for recommending David Faigman's book. Although I haven't read it yet, it appears to strongly support my article. Professor Dutch is correct in noting that our legal system has been used by both conservatives and liberals for political advantage. Ivan Webber is also troubled by the "gatekeeper" responsibilities the Daubert rule places on judges yet he places the blame for unscientific verdicts on bad experts who rely on their credentials rather than persuasive arguments. I disagree. The examples cited in my article and in the letters by Lamal and Dutch clearly illustrate how judges have abrogated their responsibilities to vet prospective experts. I also am firmly convinced that most lawyers are unable to argue effectively against an unscientific statement and juries are unable to understand critical facts when they haven't been trained in scientific methods or instructed by judges on how to interpret conflicting expert testimonies.*

*I am gratified that my article has led to a constructive dialog on junk science and the law.*

### A Bright Future for Planet Earth?

Few people in the world deserve more respect and admiration than CSICOP founder Paul Kurtz. My only gripe is that he paints too bleak a view of the future. He concludes his otherwise outstanding essay, "A Quarter Century of Skeptical Inquiry" (July/August 2001), with capitulatory statements like, "Given the massive cultural fixation on the spiritual-paranormal outlook, perhaps the most that skeptical inquirers can hope for is that we can lessen the excessive follies of its proponents."

What an utterly despondent view of the future! This is certainly not the most that I can hope for. No doubt other skeptics share my optimistic outlook. Throughout history mystics have inflicted horrendous punishment upon those who dared to question their authority. Skeptics who refused to believe in miracles and supernatural realms have been tortured and burned for centuries.

But evolution marches on and rational thinking has at last become acceptable in some places on planet Earth. In many nations those of us who do not believe in ghosts are finally free to speak our minds. Yes, there will always be mystics and the world won't change overnight but I believe the day will come when rational-minded thinkers will be as easy to find as preachers and fortunetellers are

today. This may seem like an impossible dream, but it is certainly no more improbable than my freedom to write this letter would have seemed to a skeptic burning at the stake a mere 500 years ago.

Bruce L. Flamm, M.D.  
Riverside, California

### Gardner on Karl Popper

Martin Gardner's attack on Karl Popper's work in the philosophy of science (July/August 2001) neglects to mention Popper's singular contribution to the philosophy of science and its relationship to the ongoing work of the skeptical movement. It is true that Popper's ideas on induction (and probability and quantum mechanics as well) have fallen out of favor within the discipline of the philosophy of science. But Popper, more than any other philosopher of science in the twentieth century, argued that the primary task of the philosophy of science was to draw the line between science and pseudoscience. This he called "the problem of demarcation." No one before Popper characterized the philosophy of science in this way, and one point of friction between Popper and Carnap (not mentioned by Gardner) involved Carnap's sympathy for alleged positive results in parapsychology that Popper dismissed as incredible. The *SKEPTICAL INQUIRER* is an odd place for an attack on a philosopher who in some ways wrote the charter for modern skepticism, or, in Popper's language, critical rationalism.

Douglas Lackey  
Department of Philosophy  
Baruch College, CUNY

In attacking Karl Popper's concept of falsification, Martin Gardner may very well be right in saying that in practice scientists seek by induction to verify, not falsify their theories, but even if correct, that does not deny entirely the importance of the idea. For it would seem that what Popper was after was a test for what made a statement or theory scientific *prior* to any actual research.

Carnap and the logical positivists had done us all a great service by distinguishing meaningful from nonsense statements in terms of verification—possible for the former and not so for the latter. Thus did they rightfully dismiss a lot of philosophic and religious gibberish as making no sense. Popper's point, however, was that verification could not

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suffice to distinguish true science from pseudoscience—something that readers of and writers for SKEPTICAL INQUIRER are interested and intent on doing.

That some theory could be verified was not good enough a justification to distinguish the two, since many pseudosciences had no trouble discovering or claiming to have discovered limitless examples confirming their theories. What they could not or did not do was formulate hypotheses that laid down the conditions under which the theories might be falsified. The leading example Popper cites in explaining his theory is not any nonsense theory out of religion or metaphysics, which those pointing to the superiority of verification might do, but to a pseudoscience like Freudian psychoanalysis. His point was that Freud had no difficulty glibly finding confirmation of his theories everywhere he looked, but Freud never indicated what evidence would refute, falsify, or disconfirm his theories. His theories were therefore not nonsensical, but pseudoscientific (as was much of classical psychology). . . .

Finally, even if Karl Popper were the nasty man Martin Gardner says he was, that is no discredit to his theory any more than Heisenberg's Nazi affiliations discredit his scientific work. Newton, I understand, was not such a good sort either. Moreover, even if Popper's ideas are merely another expression of logical positivism, anything that gives publicity to that philosophy I would think is all to the good, yet I still think Popper had some additional points to make that should not be entirely dismissed.

Harry White  
Chicago, Illinois

I heard of Karl Popper's death in 1994 while leading a paleontological expedition in the Kyzylkum Desert of Uzbekistan. I was lying in my tent and heard the news on my short-wave radio from the BBC World Service. I remember commenting to my colleagues the next morning how Popper along with Kuhn had had the most influence in the past fifty years on scientists' own view of how science is done. While I do not know if Martin Gardner's claim that Popper's "followers among philosophers of science are a diminishing minority," I do know from my own experience that the Popperian view of scientific inquiry remains in high regard among scientists.

In reading Gardner's article I was struck more than once by a sense of jealousy toward Karl Popper's success. I know little of Karl Popper as a man, so I cannot add or

detract from Gardner's portrait of him as a rather reprehensible individual. I do, however, find fault with his sometimes caricatured portrayal of Popper's views of science and his *ad hominem* attacks.

Gardner asserts that unnamed critics of Popper "insist that 'corroboration' is a form of induction, and that Popper simply sneaked induction through the back door by giving it a few names." This is not what I, and I am certain most fledgling scientists, learned about these two concepts many years ago. Induction, as most dictionaries note, is the process of reasoning or drawing a conclusion from particular facts. In this mode of reasoning it is argued that we gather facts to arrive at general principles. Its opposite is deduction, where we deduce the specific from the general. Corroboration is the attempt to strengthen or confirm some given premise. Both induction and corroboration "gather facts" but for two different ends. In the first instance, facts are simply gathered with no particular regard to a general premise, while in the second case facts are gathered within the context of an existing theory. For too much of the public, scientists are viewed as scions of objective truth toiling away in labs gathering facts trying to find the explanation for it all. Gardner's confounding of induction and corroboration only serves to help perpetuate this myth of science.

What Popper argued and what is clear to scientists who think about such things is that major advances in science do come through a process of struggle when newer theories compete and often overthrow the old. This is the process of falsification that Gardner misrepresents. Most scientists are about the business of corroboration. It is when too many exceptions accumulate that we begin to doubt an existing theory, which may eventually be discarded. On rare occasions we may actually have competing theories, one of which we might be able to reject (falsify) if we are lucky. It is usually a messier process than Popper's famous black crow/white crow analogy cited by Gardner. Nevertheless, Popper's ideas (and I would add Kuhn's too) were far more right than wrong in arguing that theories are eventually replaced when too many exceptions to an existing theory are found that can be better explained by a new theory.

Popper's reputation as one of the last centuries' greatest philosophers of science remains intact. Adding to Gardner's listings, two of the best books on how science is done are Popper's 1959 (reprint ed., 1992) *The Logic of Scientific Discovery* and Kuhn's (3rd ed., 1996)

*The Structure of Scientific Revolutions.*

J. David Archibald  
Professor of Biology  
and Curator of Mammals  
San Diego State University  
San Diego, California

Whilst Gardner's article is true with regard to Popper's egotism and other human shortcomings, I feel that it misses the point about the "falsification" theory expressed in *Logik der Forschung, Conjectures and Refutations*, and elsewhere. The point is that Popper is not so much expressing a descriptive or even normative view of science as a discipline but rather constructing a theory which can be used to differentiate it from non- or pseudoscience.

In this view, science is not something that progresses through falsification or contradiction (a Hegelian idea) but that instances of scientific propositions are "in principle" falsifiable. The scientific proposition "water boils at such and such a temperature . . ." is obviously discovered inductively, but we would know what type of observation and thus proposition would refute it. Science then is open to refutation and falsification. In general Popper would've said that if a scientist presented with an observational, experimental falsification of a theory tried to argue some rationalization or "work-around" to explain it away, then he or she has ceased doing science proper and is now doing something quite different.

It is this, in his view, which distinguishes science proper from some metaphysics (although speculative metaphysics is necessary to science) and pseudoscience and religion generally. Every skeptic reading this is aware that whenever they present counter arguments to believers about any number of "nutty" ideas, they try to rationalize or get round them by offering even "nuttier" theories. . . .

The falsification theories are then not a description of how science works, nor are they recommendations as to how science should work. They are simply a benchmark against which claims can be judged to be scientific or not.

Richard Noon  
Ely, Cambridgeshire, England

I have always been enjoying not only "Notes of a Fringe-Watcher" but also many essays and, of course, "Mathematical Games" by Martin Gardner. His *Fads and Fallacies in the Name of Science* and *The Ambidextrous Universe* (both original and new) taught me

joy of thinking in my youth.

And now I also enjoyed "A Skeptical Look at Karl Popper." Certainly every falsification of a conjecture is simultaneously a confirmation of an opposite conjecture, and every confirming instance of conjecture is falsification of an opposite conjecture. And induction is just too firmly embedded in the way philosophers of science and ordinary people talk and think. Surely, dropped objects will fall, and water will freeze and boil.

But I think Popper may have wanted to find out criteria of demarcation between science and such pseudosciences as astrology and Freudian psychoanalysis. Astrologers and psychoanalysts assert or claim that they have enough evidence, experiences, or proofs, although they are not evidence nor proofs in their strict/scientific sense. Popper may have exterminated some beneficial insects together with harmful ones.

Motofumi Kuze  
Tochigi, Japan

Martin Gardner's attack on Karl Popper as an overrated philosopher is more likely to diminish Gardner's reputation as a fair-minded, thorough investigator than to detract from Popper's reputation as a philosopher of science.

Gardner's article relies heavily upon attacking Popper's personality and the rivalry between Popper and Rudolf Carnap. The *ad hominem* attacks are irrelevant to demonstrating that "Popper's reputation was based mainly on his persistent but misguided efforts to restate common sense views in a novel language that is rapidly becoming out of fashion." The way Gardner states Popper's position makes Popper look like he's spouting nonsense rather than common sense. According to Gardner, Popper's best-known claim is that "science does not proceed by 'induction,' that is, by finding confirming instances of a conjecture but rather by falsifying bold, risky conjectures." If so, science would be little more than a collection of false conjectures.

Gardner also writes that Popper claimed that there is "no such thing as induction" and that is why induction cannot be justified. I take Popper to mean that induction, in the sense of making "pure" observations (i.e., observations which have no theoretical basis), collecting them, adding them up and then suddenly recognizing a law of nature or something as grand as the theory of special relativity is not an accurate picture of how scientists actually proceed. If this is common

sense, why are so many science teachers apparently unaware of it?

Finally, Popper may not have been the first to call attention to the problem of what we now call "confirmation bias," but he hammered home the idea that finding confirming evidence for almost any theory is like shooting fish in a barrel. We see evidence for this every day as more and more people calling themselves scientists publish their findings that show that prayer heals, that religious people live longer, that the universe is only a few thousand years old and has a designer, that monkeys communicate telepathically, that takionic beads improve one's athletic ability, that magnets relieve pain, and that such things as chiropractic, naturopathy, and dowsing "work." We need more Gardners to expose this rubbish, but we also need more Poppers to inspire us to think deeply about the nature of scientific investigation, knowledge, and education.

Bob Carroll  
Davis, California

I am incensed by Martin Gardner's unjust attack on Sir Karl Popper.

How can one critique Popper's philosophy of science without referring to his *Logik der Forschung*? Therein we find that Popper was hardly an obfuscationist: "I am quite indifferent to terminology, so long as it does not mislead us." Hence, Popper's distinction between his useful term *corroboration* and Carnap's *confirmation*.

Popper never made "efforts to expunge the word *induction* from . . . scientific discourse . . ." he just tried to establish its logical foundation. Popper himself proposed "degree of corroboration" by which the best theories "proved their mettle" (but not their truth!) However, Popper did insist on the severest tests possible.

Many before Popper pondered the "riddle of induction." Hume earlier pointed out the fallacy of inductive proof in science. Popper's insight was that science corrects itself only through refutation. If most "scientists" (and others) still seek proof by inductive confirmation, that is not a tribute to logic and common sense, but rather to the pervasive influence of Bacon and Newton on Western thought. Also, Gardner notwithstanding, scientific theories are to be framed in a certain positive sense, such that corroborations and refutations cannot be paradoxically interchanged.

Without elaborating (due to space limitations), I find Gardner's three objections to

Popper's falsification principle irrelevant, and his coloring of the issues with commentary on Popper's reputed character flaws shabby. Having once spoken with Popper, I have a very different impression of the man.

Despite Gardner and other critics, I am confident that history will remember Karl Popper as one of the greatest minds of the twentieth century.

Frederick Cichocki  
Boca Raton, Florida

*Martin Gardner replies:*

*Because there is so little space for commenting on so many letters, I will limit my remarks to Harry White's main point. He chides me for not mentioning Popper's claim that a theory has no cognitive content unless it can be falsified, and that this provides a useful basis for demarcating good from bad science.*

*I omitted this aspect of Popper's philosophy of science because the idea was not new. It was advanced by earlier thinkers, notably William Whewell and Charles Peirce. Popper's favorite example of a theory that cannot be falsified was Freudian analysis. This is surely wrong. Adolf Grünbaum, in The Foundations of Psychoanalysis (1984) shows clearly that psychoanalysis not only can be falsified, but that in fact it already has been.*

## The Polygraphs Controversy

*We publish this letter from Aldrich H. Ames with mixed feelings and only because Ames indeed is an expert, of sorts, on polygraphs. Ames is a convicted spy. He was a CIA employee for thirty-one years who volunteered his services to the KGB in 1985. During the following nine years until his arrest in February 1994 he compromised more than 100 intelligence operations against the Soviet Union. He successfully passed counterintelligence polygraph examinations. Ames mailed this letter to the editor, handwritten, from Allenwood federal penitentiary.—EDITOR*

Dr. Zelcoff's discussion of polygraph junk science (July/August 2001) was a very useful one, and its highlight is the apparent determination he and others have to resist the destructive spread of that superstition. His uncontroversial point that "protecting secrets is a challenging task" suggests to me another point worth making. In my experience with the polygraph, as user and subject, its junk science does provide an important but discreditable service for lazy and timid national security managers (also known as a species of



bureaucrat). Decisions about personnel suitability for sensitive positions can be not only difficult for the usual and proper reasons, but also quite risky for the careers of decision-makers. There's a lot at stake for the bureaucrat. Faced with the prospect of excruciatingly hard work, considerable expense, and agonizingly difficult choices, the box offers an attractive refuge from responsibility. Like handing fate to the stars, entrails on the rock, bureaucrats can abandon their duties and responsibilities to junk scientists and interrogators masquerading as technicians.

Dodes's article on the intersection of law and science made many, though somewhat unorganized, good points. But I would take a more optimistic view of progress being made, especially since we are stuck, in any legal system, with the necessity of deciding questions of fact. Justice Blackmun's opinion in *Daubert v. Merrell Dow Pharmaceutical, Inc.*, 509 U.S. 579 (1993) has now been incorporated in the Federal Rules of Evidence. The point is to have the judge act as a much stricter gatekeeper of what gets presented to the jury as scientific knowledge and opinion. Now Rule 702 permits scientists and technical experts to testify to their knowledge and opinions only if

- (1) the testimony is based on sufficient facts or data,
- (2) the testimony is the product of reliable principles and methods, and
- (3) the witness has applied the principles and methods reliably to the facts of the case."

It is not a bad preservation of the scientific method and seems to be progress.

Going back to the polygraph, the new Rule 702 nails down the inadmissibility of polygraphic superstition even more firmly. Perhaps Zelicoff or others (the ACLU among them) might take the issue further. When people's livelihoods, reputations, and personal lives are injured or even destroyed by junk science, cannot the law protect them?

Aldrich H. Ames  
Reg. No. 40087-083  
White Deer, Pennsylvania

Polygraph tests are a long way from being perfect, but they are also a long way from being no better than chance at finding the truth. Because of the limitations you cannot just ask people if they are spies and expect to find the spy in your organization. Worse, because the frequency of spies is so low, this tactic will clutter the results with people who are not spies (false positives).

However, this does not mean that a

polygraph test is useless, just that you have to put some thought into how you use it. The following is a thought experiment of how to be successful. Suppose there are ten people in a room and one smashes a vase in full view of the others. The ten all have unique names like A, B, etc. and are given a polygraph test by a separate polygraph operator, who does not know who broke the vase. The questions can only require a yes or no answer. Questions might be like the following. "Do you know who broke the vase?" "Did 'C' break the vase?" To make it more interesting, five of the people are told to lie randomly to questions of their choice on the test. In spite of this, each polygraph operator will have a good chance of finding the guilty party, because the interviewee must lie successfully (or be falsely accused of lying) on many pertinent questions. Further, there will be ten different polygraph operators who have formed their independent opinions. Can they all be wrong? How many times does one name have to show up before we suspect who did it?

To catch spies, you again set up multiple tests with multiple polygraph operators. Questions might be like the following. "Do you ever take work home?" "Is this ever classified material?" "Have you ever heard that classified material is taken out?" "Do you think you could get classified material out without being detected, if you wanted?"

There are at least two things that are necessary for polygraph detection to be successful. One is that the polygraph operator not know who the guilty party is. Otherwise, he cannot be unbiased. Second, several people must be involved in the illegal enterprise you are trying to find. If it is a lone spy, the false positives will make the task impossible. If it is a spy ring or others have observed suspicious behavior, then you have a better chance. As the number of people who know something increases, you become more and more sure of finding the truth.

Thomas R. Freeman  
Columbia, South Carolina

Two things were of special interest to me in the July/August issue of SI.

The first was the article about polygraphs. For a dozen years I have been telling my seventh-grade students that there is no such thing as a "lie detector." (The closest thing is probably their mother.) This statement is always met with great skepticism. (Good for them!) As we discuss what the

machine can do and find out that there is no direct correlation between what is in a person's mind and the physiology involved, the kids begin to see the light. "But," they ask, "why do we have them if they don't work?" I answer that in my opinion they are used to scare people into confessions.

One other thing that the kids usually come up with during this discussion is that if there were such a thing as a lie detector, there would be no need for judges or lawyers. Oh happy days! Thank you, Mr. Zelicoff, for the article.

The other item in this issue of great benefit to me is the SI index. It will be of great benefit in my class because I have all the back issues of SI and the students can do their research more easily.

Larry Barrieau  
Winchendon, Massachusetts

Alan Zelicoff's article is a surprisingly harsh polemic about the uselessness of polygraphic examinations. He uses such cute expressions as: polygraphs are "no more capable of assessing truth telling than were the priests of ancient Rome standing knee-deep in chicken parts" and refers to polygraphs as a "cheap parlor trick." He dismisses the whole topic by saying: "The truth is this: the polygraph is a ruse, carefully constructed as a tool of intimidation. . . ."

All of these statements may be true, but aside from referring to unnamed "dozens of studies over the past twenty years" that show that polygraphs "cannot distinguish between truth-telling and lying," Zelicoff offers no proof.

Worse, he shows a contempt for the device and its practitioners that flaunts Ray Hyman's article on proper criticism in the very same issue, where he advises not to use "loaded words and sensationalism."

It may be that properly controlled studies do support (or perhaps even refute) Zelicoff's argument, but it would be useful to know what they are, rather than to resort to the same denigration, overstatement, and unfounded charges that we criticize proponents of junk science instruments for using.

Raoul Drapeau  
Vienna, Virginia

The polygraph is one of the most misunderstood and most frequently maligned instruments of credibility assessment in the long history of that critically important topic. Its critics come both from the left and the right,

but rarely from those in the front lines of the daily battle to apprehend criminals and bring them to justice.

Characteristically, New York City Detective Ralph Nieves appeared on the Greta Van Susteren show on July 9 to assert that a million polygraph tests are carried out each year, and that with modern computer and algorithm techniques accuracy has reached 97 percent.

In the 1998 case *U.S. v. Edward D. Sheffer*, U.S. Supreme Court Justice John Paul Stevens asserted that the accuracy of the polygraph is 85 to 90 percent.

There is a case to be made that the very accuracy of the polygraph is a source of opposition to its use. Since earliest times judges and lawyers have reveled in the broad discretion that is theirs under rules of evidence that depend heavily on assessments of "demeanor." Thus anything that supersedes demeanor is bound to encounter the firmest opposition. In short, Luddism really has its day in the courtroom.

Of course to readers of the SKEPTICAL INQUIRER such irrationality is commonplace to the point of banality, and one hopes the SKEPTICAL INQUIRER will soon help set the record straight on the roles of demeanor and the polygraph in credibility assessment. In that effort it should be useful to know that University of Texas Law Professor Olin Guy Wellborn III showed in his article "Demeanor" in the *Cornell Law Review* for July 1991 that what should be called "Demeanorology" is no better than guessing.

That article should have had a profound effect on court practice. But it has not, and demeanor continues to rule the courts today while polygraphy is a target of steady belittlement outside of law enforcement officers. The SKEPTICAL INQUIRER thus has a truly extraordinary opportunity to bring reason to bear and to confound ancient superstition where it counts very heavily in everyday life—in the courtroom. I hope SI will grasp that golden opportunity and make the most of it.

Lawrence Cranberg  
Co-founder, Austin Society  
to Oppose Pseudoscience  
Austin, Texas

The bias against polygraphs by Alan Zelicoff, while legitimate in some respects, fails to give polygraph its due. I spent many years as an examiner. During that time I learned that while there is no such thing as a lie detector, the polygraph can indeed aid in the detection of lies and fabrications—placing the odds at

detecting a lie significantly better than chance, given a well trained and skillful examiner. The real problem lies, as Zelicoff notes, in the administration of technology that falls short of perfection, but is all we've got, in circumstances where in-depth investigation is either impossible or unrealistic. With adequate, certified training, plus several more months of very close supervision, and a well-tested, rights-sensitive process, polygraphy can serve the public well.

Yes, there are mistakes. But in a properly administered program the damage to individual test subjects due to false positives is minimal. That does not lessen the hurt to the victims of a false positive, and for that I have no answer. However, I would remind Zelicoff that false positives from less-than-perfect medical tests are widespread and dangerous, and yet he doesn't call for their abolition. Perhaps that's getting too close to home.

Jim Dunn  
Fort Lauderdale, Florida

*Alan Zelicoff replies:*

*I am delighted that my article on polygraphs generated so much interest among SKEPTICAL INQUIRER readers.*

*Aldrich Ames describes, with experience from years in the intelligence community and in ways that I never could, the bureaucratic laziness that the polygraph fosters. There could be no stronger endorsement of the view that polygraphy undermines national security where it is utilized. I only hope that counter-intelligence professionals examine his critique carefully.*

*Mr. Freeman presents a solution that is attractive at first blush, but one which is statistically meaningless—repeating the same test multiple times. Doing so only multiplies false positives and negatives. Also, Mr. Freeman uses an example of a very specific crime and one which precipitates highly focused questions, akin to a criminal investigation. There is some small evidence in the literature that polygraphs have improved sensitivity when applied as part of a focused criminal investigation, but are only meaningful in the setting of a high pre-test likelihood guilt (10 percent in his example) that in turn exceeds the false positive rate of the test. None of this obtains when polygraphs are used in the screening mode where one is confronted with finding one spy (or criminal) in ten thousand as using much vaguer queries.*

*As for asking a wide range of different questions, I would go so far as to agree that this hypothesis should be tested, but I am not optimistic (based on existing clinical trials) that the box will be anymore successful than interroga-*

*tion alone.*

*Mr. Barrieau's letter reminds us that children do not make a practice of fooling themselves and are unabashed enough to point out to adults when we are fall prey to simple solutions that depend on self-deception. Thank Heaven for them all.*

*Dr. Cranberg succumbs to the logical fallacy of "accuracy," stating that the polygraph scores high marks by this measure. Ninety percent isn't nearly good enough when applied to ten thousand national laboratory scientists as it means 1,000 (or 10 percent) will be falsely categorized as deceptive. The follow-up costs, let alone the effects on morale, are very high. Besides, I can be 99.99% accurate by stating a priori that there are no spies in the Labs and incur no costs at all.*

*For Mr. Drapeau, who complains that I provide no references, let me state first that my piece was written as a commentary, not as a scientific article. However, I have collaborated with other scientists at Sandia National Labs to produce an up-to-date review article of the polygraph literature. Interested readers can see it at <http://antipolygraph.org/read.shtml>.*

*Results from multiple trials of polygraphs (in both the screening and criminal investigation mode) are reviewed. Please understand that I do not necessarily endorse all views of the Web page sponsors, but do fully support everything within the Sandia document that has been conveniently posted on their Web site.*

*Finally, Jim Dunn makes the entirely obvious statement that diagnostic tests are imperfect in medical practice and that my critique of polygraphy is illogical because I don't "call for the abolition" of medical tests. But what he completely misses is that any test (including polygraphs) is properly administered only when the pre-test probability exceeds the false positive rate. On this, use of the polygraph in the screening mode (false positive rate at least 10 percent, pre-test probability approximately .0001) falls short by several orders of magnitude, hardly the case with well-chosen medical tests. This more subtle observation cannot be appreciated without a minimal knowledge of introductory inferential statistics and the ability to do long division. Perhaps for Mr. Dunn it is these failings that are too close to home.*

## A Rebuttal to 'Voodoo Science'

An article in the SKEPTICAL INQUIRER by Robert Park (Park 2000) derided the research of John Hagelin and collaborators, myself included. Based on forty-one previous studies, we predicted publicly that a large group prac-

ticing the Transcendental Meditation program would lower violent crime levels in Washington, D.C., by reducing stress and tension in society. During the eight-week experiment in the summer of 1993, violent crimes against the person (homicides, rapes, and assaults) decreased by 23 percent and closely tracked the rise in the number of participating mediators. The results were published in *Social Indicators Research*, a respected, peer-reviewed scientific journal (Hagelin 1999).

Park abstains from any serious consideration of the study data and the appropriateness of the statistical methodology. His article contains not a single statistic and betrays no evidence that he read the study. Apparently, he believes our hypothesis was ridiculous on its face and could be rejected outright. This is remarkable, given his advocacy of testing theories scientifically and careful scrutiny of scientific evidence. Due to space limitations we cannot refute here all of Park's falsehoods, including a baseless attack on Hagelin's scientific reputation, but detailed evidence against his claims is in the published paper and on our Web site.

Park lampoons our time series analysis as "technobabble," only "meant to give the appearance of science." He proclaims that "It was a clinic in data manipulation," implies that the researchers were strongly biased, and refers to the "experiment" in derisive quotation marks. "Technobabble" and "pseudoscience" are loaded words, which the SI editorial guidelines say should be avoided. Despite these statements, which are tantamount to a charge of scientific fraud, he presents no scientific argument and merely echoes the comments of a reporter. Time series analysis, which effectively eliminates other possible explanations for the results, was clearly the correct statistical method for this study.

The analysis showed a highly significant fall in crime when it usually reaches its peak during the hot summer weather, and a direct relationship between the size of the meditating group and the drop in violent crime. Park objects to our calculation of how much violent crime dropped, but this calculation was an adjunct step performed after the time series analysis, and therefore challenging it does not contradict the main result. The reduction in violent crime is evident in the raw data, before any statistical analysis. Therefore, our main finding stands. The reduction was calculable because violent crime levels are predictable on the basis of temperature—a fact that is well known among criminologists, and was clearly explained at the press conference that Park attended, and in both the initial report and the published paper.

In spite of this evidence, Park asserts that levels of violence actually increased to record levels. He confuses homicides—which accounted for only 3 percent of violent crime in Washington during 1993—with violent crimes in general. It is true the murder rate did not drop during the experiment—as we acknowledged in the initial research report and in the published study—but contrary to Park's claim there was no significant increase in homicides. (See our site at [www.istpp.org/crime-prevention.htm/rebuttal](http://www.istpp.org/crime-prevention.htm/rebuttal).)

#### References

- Hagelin, J.S., M.V. Rainforth, D.W. Orme-Johnson, K.L. Cavanaugh, C.N. Alexander, S.F. Shatkin, J.L. Davies, A.O. Hughes, and E. Ross. 1999. Effects of group practice of the Transcendental Meditation program on preventing violent crime in Washington, D.C.: Results of the National Demonstration Project, June–July, 1993. *Social Indicators Research*, 47(2):153–201.
- Park, Robert L. 2000. Voodoo Science and the Belief Gene. *The SKEPTICAL INQUIRER*, September/October: 24–29.

Maxwell Rainforth  
City, State

Robert Park responds:

*Thank you for the opportunity to respond to Rainforth's letter.*

*O.K. I'm busted. I did deride the 1993 "research" on the reduction of violent crime by TM. It was, however, promoted as a "Demonstration Project," not an experiment, which might raise some concern about objectivity.*

*Rainforth charges that I confused homicides with violent crimes in general. He elaborates on this on the Web page of the Institute of Science, Technology and Public Policy ([www.istpp.org/voodoo-rebuttal.htm](http://www.istpp.org/voodoo-rebuttal.htm)):*

*It is true the murder rate did not drop during the course—as we acknowledged in the initial research report and the published study—but the facts were very different. For six weeks ending the month before the experiment, from mid-March through April, homicides averaged ten per week. Beginning one week after the course and for twelve weeks thereafter, homicides also averaged ten per week. During the eight weeks of the experiment, in June and July, the average was again ten per week—except for one horrific 36-hour period in which ten people died. Apart from this brief episode, which was a statistical outlier, the level of homicides during June and July of 1993 was not significantly higher than the rest of the year.*

*Well, there you have it. Results that don't support the prediction are simply declared to be a statistical glitch.*

## Reynolds NDE Report

In his Letter to the Editor in the July/August issue, Antony Flew made several errors when referring to the near-death experience (NDE) of Pam Reynolds, which I reported in *Light & Death* (Grand Rapids: Zondervan, 1998). After misspelling my name and incorrectly citing my first book *Recollections of Death* as the source, he claimed that "this case depends on the unsupported testimony of the author: which, in a matter of such eschatological importance, is quite scandalously inadequate."

Pam's case was meticulously reconstructed from the operation reports of the neurosurgeons, neuroanesthesiologists, and cardiovascular surgeons present during her 6 hour and 55 minute operation. This procedure required hypothermic cardiac arrest, complete electrocerebral silence, and drainage of the blood from her intracranial vessels. Cortical brain temperature, EEG, brain-stem auditory evoked response, and arterial blood gases were monitored throughout surgery.

Details of Pam's NDE were obtained using a structured interview protocol. Her NDE-associated descriptions of the surgery were recorded verbatim in *Light & Death* and then compared to surgical photographs and diagrams. Dr. Robert Spetzler, Professor of Neurosurgery at the University of Arizona College of Medicine, is a world-renowned expert in this highly specialized area of neurosurgery and performed Pam's surgery. Spetzler assisted me in carefully reconstructing Pam's case has repeatedly supported the accuracy of my report in national and international media.

Mike Sabom, M.D.  
Atlanta, Georgia

Antony Flew replies:

*What I claimed to be, and is, unsupported in Recollections of Death is not its account of the surgical procedures but its claim that Pam thereafter remembered what was done to her while she was brain dead.*

## Swamp Monsters

Re: "Swamp Monsters" and their ilk (Joe Nickell, July/August):

If these cryptozoologic creatures were real, they could not exist in isolation, i.e., there should be a pedigree trace and a

colony of them with at least a dozen individuals (fathers, mothers, babies) to perpetuate the race. Compare rare species of animals near extinction. Some traces of questionable footsteps is not enough; they are too easy to fabricate. One should find in addition "campsites" with leftover meals, excrements, and other signs of occupation of the terrain in question such as primitive shelters.

In absence of all such elements, the monsters are only a fiction of mind.

Lassi Hyvärinen  
Divonne-les-Bains, France

## Reptoid Report Sinks

In his *Psychic Vibrations* column in the July/August 2001 issue Robert Sheaffer related that Joseph Trainor's UFO Roundup included reptoid sightings in Hoyum Hall at Concordia College in Moorhead, Minnesota. As a faculty member at Concordia for the past seven years I was quite surprised that I had heard nothing of these incidents. A quick check of Mr. Trainor's Web site ([www.ufoinfo.com/roundup/](http://www.ufoinfo.com/roundup/)) revealed that he was indeed writing about the Hoyum Hall I walked past each day on my way to the physics department.

Intrigued, I questioned colleagues of longer tenure as well as undergraduates of more recent vintage but no one had ever heard of the Reptoid incidents. A trip to the college archives and a search through back issues of the student newspaper was equally disappointing. In fact it appears that there are no stories of paranormal activity in Hoyum Hall. This fact struck me with considerable force. There were no reports of supernatural sounds, translucent ghosts, or mischievous poltergeists, let alone green-skinned reptoids in an undergraduate girls dorm! Surely this must indicate the presence of some powerful sink of paranormal energy! But perhaps I am premature in my assessment; after all extraordinary claims do require extraordinary evidence.

Bryan A. Luther  
Associate Professor of Physics  
Concordia College  
Moorhead, Minnesota

*Robert Sheaffer replies:*

*Thanks for the info. Why am I not surprised? I'm forwarding a copy to Trainor's "UFO Roundup" for their information.*

## 'Rebirthing' Death Conviction

The Ponder and Watkins case ("Rebirthing Update: Therapists Convicted, Therapy Outlawed in Colorado," by Benjamin Radford, July/August 2001) doesn't actually "serve as a powerful response to the common question, 'What harm does the New Age do?'"

New Agers can claim that Ponder and Watkins either misused the techniques for rebirthing or weren't practicing rebirthing at all. The New Age people I've met have been, however crackpot, gentler than most. More important, as Radford points out, outlawing a technique while ignoring the problem of unlicensed therapy leaves the door open to other abuse.

This case is about something else. Candace Newmaker pleaded that she was dying; they told her to "go ahead and die." Hold a gun to someone's head, say that, and pull the trigger. That's premeditated murder, which carries more than "up to forty-eight years in prison." And a gun at least brings instant oblivion. Candace Newmaker was subjected to over an hour of brutal torture, followed by an agonizing death by asphyxiation. To describe this as "abuse" during "therapy" is to blind oneself (as the too lenient court in Colorado did) to the extent of Candace's suffering and the true brutality of the defendants.

Ponder and Watkins' acts were not those of misguided New Age therapists but of self-serving, unrepentant sadists. Their defense tried to blame this helpless child for her own death. An adult subjected to such treatment may use deadly force to save his life. Would that Candace had had a gun! . . .

Jerry Engelbach  
Brooklyn, New York

I was bothered by some of the larger aspects of this case and also by some sentiments I inferred from Mr. Radford's comments.

What is at issue here, and what the court correctly addressed, is reckless endangerment with fatal consequences. While "rebirthing" is apparently useless, a single fatal case caused by gross disregard of common sense does not qualify it as a dangerous activity. The far more ominous outcome of this is the equally unscientific headline-driven legislation of the Colorado legislature and governor.

Far more people (including children) are killed and injured skiing, boating, bicycling, etc., which they engage in with full permis-

sion of their parents. This single incident hardly rises to even that level of dangerous pattern or serious risk. Far too often, lawmakers jump into intrusive, unscientifically based legislation for the sake of photo-ops and the perception of "doing something." This results in a hodgepodge of unnecessary and poorly thought out laws.

This is such a case. While I agree that rebirthing is probably useless, I cannot share Mr. Radford's apparent satisfaction at its prohibition. For one thing, since there is no "official" definition of rebirthing, the law has to define what it perceives it to be. Since there is no scientific or statistical safety information other than one extreme data point, there is nothing upon which to base such a rule other than arbitrary guesswork. Nor does licensing (getting the questionable "permission" of the state to do something) or its absence mean much without some quantifiable and widely accepted criteria of what constitutes safe actions.

Jay Holovac  
South Bound Brook, New Jersey

## Big Balloons

I too am an airship buff but I've also flown an experiment on a high-altitude balloon. May I point out that to compare their volumes, as P.A. Hancock, David Thomas, and Kendrick Frazier do in the Letters section of the July/August SI is a little misleading since the masses of lifting gas differ considerably.

My reference gives the gas capacity of the Hindenburg as 200,000 cu. m, so the figure of 7,063,000 cu. ft. is correct, if spuriously precise. However, the Hindenburg normally flew below 1,000 feet. This volume of hydrogen under normal atmospheric pressure would weigh about 18 metric tons. High-altitude balloons are launched with 1 percent or less of their volume inflated. They don't achieve their full size below some twenty miles altitude. (At launch they look remarkably like the classical "silver ice cream cone" UFO, I wonder why?)

A balloon "five times the volume of the Hindenburg" designed to reach an atmospheric pressure of 5 mbar, about twenty-two miles altitude, would require 5,000 cu. m of helium to inflate it. Even though helium is twice as dense as hydrogen, this is less than one metric ton of gas.

Tom Napier  
North Wales, Pennsylvania

## Hallucinations and 'Recovered Memories': A Response

Francis X. Kane (July/August 2001), in a letter about my article "A Psychological Case Study of 'Demon' and 'Alien' Visitation" (March/April 2001), mentioned that it was "particularly interesting," given my interest in the recovered memory controversy, that I neglected the topic of therapist-induced false memories in response to hypnagogic or hypnopompic hallucinations and/or nightmares. In my article I had only intended to briefly review the literature on hypnagogic hallucinations relevant to the clinical case that I was presenting, which did not involve nightmares, sexually tinged hallucinations, or allegations of abuse. Nevertheless, the issue of possible misinterpretations of hypnagogic hallucinations potentially leading to false allegations of sexual abuse warrants discussion, and I appreciate the opportunity to respond. The issue of nightmares or dreams leading to sexual abuse accusations, though, is perhaps beyond the scope of this necessarily brief response, although similarities between nightmares and hypnagogic hallucinations have been noted in the literature.

Throughout history, hypnagogic hallucinations of an oppressive nightly intruder, whether of the incubus, succubus, or extraterrestrial variety, have often been associated with erotic sensations on the part of the half-awake victim, and this experience could easily be misconstrued by an overzealous therapist as a "sign" that the client had been sexually abused. Indeed, there are probably more therapists who are hyper-vigilant for cases of sexual abuse than there are therapists who believe in alien abduction. But what *does* explain the erotic component of these hallucinations, if not some type of distorted representation of a past sexual abuse scene?

In his book *Fire in the Brain* (1992), Ronald Siegel suggests that the image of the nightly intruder is constructed in the brain based partially on physiological responses and sensations in the body that typically occur during sleep paralysis. The erotic sensations may occur because of oxygen deprivation in certain brain centers due to fear-induced hyperventilation. He states that the erotic response would be similar to that obtained with autoerotic asphyxia, the practice of tying a cord around the neck during masturbation. Siegel further explains (p. 89) that the sexual arousal during these hallucinatory experiences of half-sleep *haunting* may be partially "a carryover from REM sleep, which, for

males, is accompanied by penile erections."

Nevertheless, I suspect that the content of hypnagogic hallucinations may at times have some psychological meaning beyond simply being an image constructed based on an unconscious weaving together of internal physiological stimuli, and Siegel acknowledges that some factors universal to human experience may partially account for the succubus phenomenon. However, the sexual feelings that sometimes accompany these frightening yet normal hallucinations do not necessarily indicate that the sleeper has been a victim of past sexual abuse. And, indeed, it is reprehensible when well-intentioned but misguided therapists cause harm to their patients and to other innocent people by using leading and suggestive techniques to validate erroneous assumptions of sexual abuse. False memories *can* be induced.

It is also highly unfortunate, however, when legitimate victims of sexual abuse are not believed due to familial and societal denial. Although perhaps partially motivated by a desire to protect innocent people from false allegations, the reluctance of many skeptics to acknowledge the evidence for emotionally motivating forgetting of trauma may inadvertently contribute to the suffering of some true victims of abuse, whose painful disclosures are often met with disbelief. Repressed memories *can* be real.

Andrew D. Reiser, Psy.D.  
Cambridge Psychiatric Hospital  
Appalachian Behavioral Healthcare  
Cambridge, Ohio

## Rounding Out Edison

In April 1992, I was hired by Knott's Berry Farm in Buena Park, California, as the presenter for its Thomas Edison Workshop. During these past nine years, I studied and learned much about Thomas Edison, his inventions, his contemporaries, and his times.

Among the exhibits in the workshop is an autographed photograph of Edison. It is inscribed, "To Prof. Bert Reese . . . one who has remarkable mental gifts.—Thos. A. Edison." For many years, I wondered to whom and what Edison meant. About four years ago, I received my answer. A co-worker at Knott's and a friend from Israel both sent me copies of your July/August 1996 edition of the *SKEPTICAL INQUIRER* with Martin Gardner's article, "Thomas Edison, Paranormalist." The article helped explain and supplement much about Edison and his personality. I have found that article and other

additional information very useful when discussing about or performing as Edison for adult audiences. Among these are the complex characteristics of the man, i.e., an agnostic who was married to a devout, church-going Methodist; his prejudices about Jews, while his light bulb filaments were improved by a Black assistant, Lewis Latimer; his plans to build a machine to contact the dead (his rival, Nicola Tesla, tried to contact the planet Mars with radio signals and was suspected to have planned a death ray machine); his efforts to discredit alternating current and George Westinghouse with his invention of the electric chair; and many more. These stories are entertaining and help round out the personality of the Wizard of Menlo Park.

I am sorry that I have taken so long to write and thank you, your magazine, and Martin Gardner for adding so much to my knowledge of Thomas Edison. Please continue with your good work.

Peter M. Small  
Historical Impressionist  
Placencia, California

## Red Faces

In the September/October issue, the NASA image on page 6 is rotated about 180 degrees relative to the "Face" photo on page 5 (NASA posted it that way on its Web site). But this minor snafu has served an immensely valuable purpose. Rotating the "Face" 180 degrees, one can see *two* faces emerge (more clearly so by turning page 5 upside down). On the left, in shadow, is a human profile looking to the right at a glowing, "ET" face (or is it a human fetus)? Maybe we've been looking at the "Face" upside down all along!

Gary P. Posner  
Tampa, Florida

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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## Black Hole Snacks

This false-color image shows the central region of our Milky Way Galaxy as seen by NASA's Chandra X-ray Observatory. The bright, point-like source at the center of the image was produced by a huge X-ray flare that occurred in the vicinity of the supermassive black hole at the center of our galaxy. A scientific report was published in the September 6, 2001, *Nature*. NASA issued this image on September 5.

Credit: NASA/MIT/F. Baganoff et al.

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