SKEPTICAL INQUIRER

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POLICE & PSYCHICS

QUESTIONING THE CLAIMS

The Big Sur 'UFO' Identified

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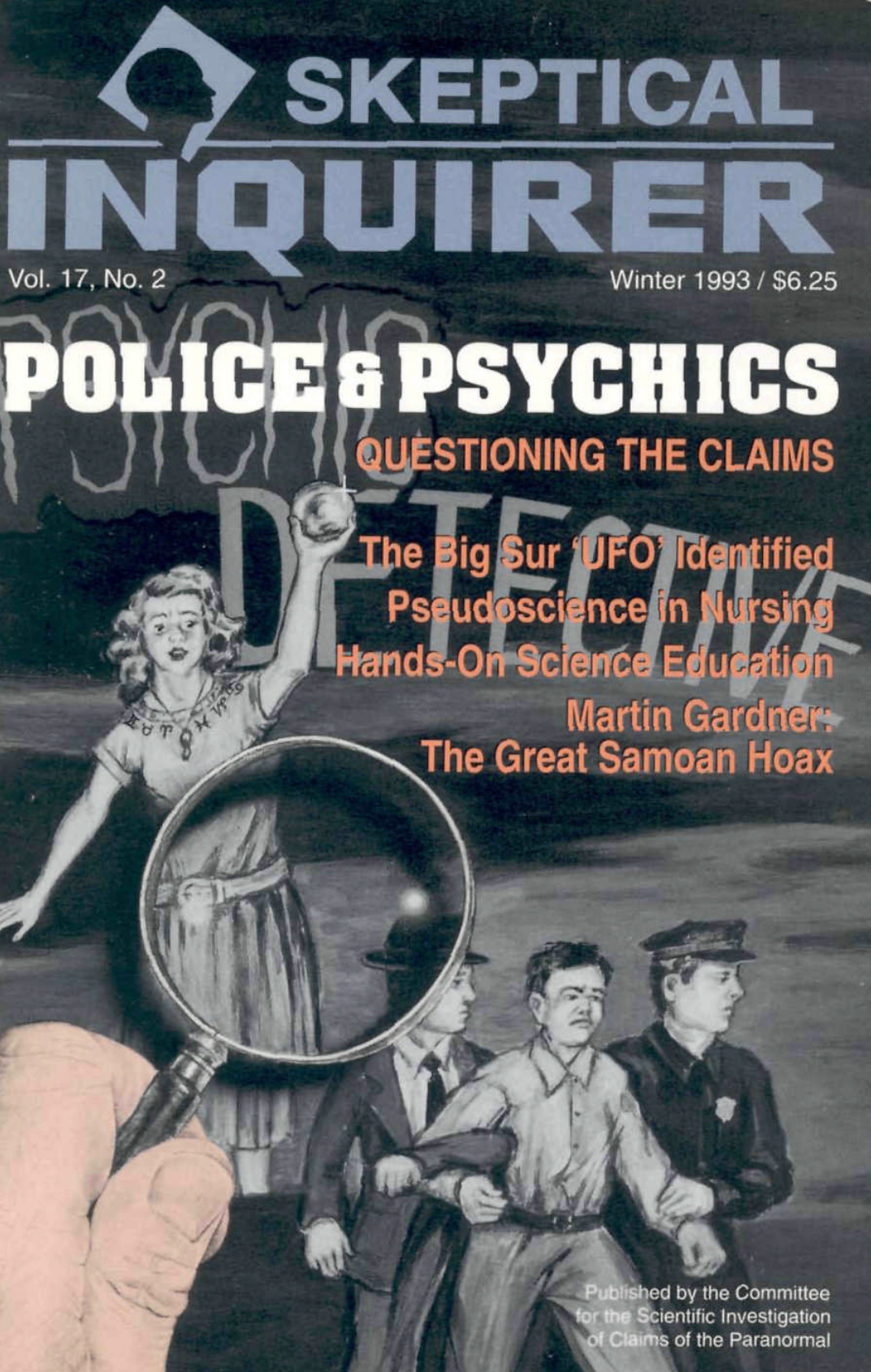
Martin Gardner: The Great Samoan Hoax



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SKEPTICAL INQUIRER

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Journal of the Committee for the Scientific Investigation of Claims of the Paranormal

ON THE COVER: Illustration by Bruce Adams.

CSICOP LEGAL DEFENSE FOUNDATION

Help Us Defend Skepticism Against Harassing Suits

In the Winter 1992 issue of the *Skeptical Inquirer* we outlined the difficulties that the Committee for the Scientific Investigation of Claims of the Paranormal is experiencing because of harassing lawsuits filed against skeptics.

We feel confident that these suits will eventually be dismissed. Still, we suspect that the lawsuits were brought for reasons other than the redress of alleged grievances.

For what do these suits mean? They mean that the pro-paranormalists think they have finally found a way to strike below the belt of scientists and skeptics. For years they have been unable to prove their claims of miraculous abilities. They've grown tired of hearing our challenges. Now they have turned to intimidation by lawsuit in an effort to silence their only persistent critics.

It doesn't necessarily matter if the plaintiff wins or loses the suit. Their purpose is to waste their opponents' resources and to intimidate and silence them—in effect, depriving individuals or organizations of their First Amendment rights.

We are by no means a wealthy organization, but we are not prepared to surrender our rights. *We have vowed to fight back.* To do so, we need your support. CSICOP has established the CSICOP Legal Defense Foundation. Its funds will be used to help pay the costs of existing lawsuits and any that may arise in the future, and to countersue when appropriate.

Don't allow the claim-mongers to destroy CSICOP (and the values of science and reason it steadfastly represents) through unjust and frivolous legal proceedings. Support the CSICOP Legal Defense Foundation today. It's the best way to blunt this frightening new weapon of the apostles of nonsense.

— —

Yes, I want to help defend the rights of skeptics. Enclosed is my tax-deductible contribution of: $ _____

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News and Comment

An Unbeliever Among The Faithful

This past May, Cambridge University appointed its first research fellow in parapsychology. Normally, you might not expect this to be a high-profile news item. But the post went to a skeptic, Nicholas Humphrey, and this turned an unusual academic appointment into a media event in Britain.

The *Times* of London wasted no time in interviewing Humphrey, who was refreshingly forthright in his replies. "After a hundred years of experiments into the paranormal," he said, "they have come up with nothing convincing. I want to show not only that these things don't happen, but that they are logically impossible, that the paranormal is all in the mind."

Nor did he give any ground to the spiritually minded. "Roman Catholicism without the paranormal would be nothing; it needs its miracles. But then who needs Catholicism? Praying has no paranormal benefits—statistically, it is not going to help."

"The most important work to be done in this area," he said, "is to expose the fallacies. This is not a game. A lot of people are putting around misleading ideas, and others are being conned financially and intellectually."

Almost immediately, ruffled feathers began afluttering in the dovecotes of academe.

A letter to the *Times* was signed jointly by the president of the Society for Psychical Research (Archie E. Roy) and three past presidents (John Beloff, Arthur J. Ellison, and Alan Gauld). "Dr. Humphrey," they wrote,

"appears to be lumping together all the silliest nonsense and foolish superstitions he (and we) dislike and calling it parapsychology. . . . We had hoped that the day was long past when academics not noted for their wide experiences of psychical research could feel free to dismiss it in a manner that would damage their reputation if applied to any other scientific discipline. Sadly we seem to have been mistaken."

A day or two later, *Times* columnist Bernard Levin devoted an article to an attack on Humphrey, under the headline "Why do scientists become unscientific when confronted with evidence of the paranormal?" He criticized Humphrey for behaving "as though all mysteries, large and small, are either already solved or very shortly will be."

Humphrey replied: "I recognize at least as well as Levin (possibly better) how far we are from understanding the workings of the human mind. But, when faced by evidence of paranormal powers, I, unlike Levin, am inclined to be more curious about their natural meaning than reverent about their supernatural one."

It all began when two members of the Society for Psychical Research (SPR) left a grant of money, known as the Perrott and Warwick Fund. It was given to Trinity College in Cambridge University to administer. It incorporated two bequests. One was that the money be used "absolutely for the purpose of psychical research." The other was that phenomena should be investigated when they seemed to suggest "(a) the existence of supernatural powers of cognition or action in human beings in their present life; or (b) the persistence of the human mind after bodily death."

Trinity College in turn passed the buck to Darwin College (also of Cambridge). Darwin College is largely concerned with research into the physical sciences, and the dons there were imperfectly sensible of the honor thus bestowed upon them. Hugh Mellor, professor of philosophy, complained that it would link the college with "spooks, ectoplasm, and card games." And as a body, they insisted that "the dubious terms 'psychical research' and 'parapsychology' should not be used either in the title or in the public advertisements."

Finally it was agreed to use the money for research into "why some people could be induced to believe impossible things."

This shift of emphasis has upset many in the paranormal establishment who seem to see a researcher's job as a search for evidence to support their previous conclusions. It is all uncomfortably redolent of the SPR's early days, when its declared purpose was to demonstrate the survival of the soul empirically. (Frederic Myers said in his presidential address that the Society's very aim was to supply a "preamble to all religions.")

Since then, the ripples have spread. In Edinburgh University, Charles Honorton said he found "several misleading statements" about parapsychological research in the brief comments that *New Scientist* made on the appointment.

In Cambridge itself, further complaints came from Brian Josephson (usually referred to simply as the inventor of the Josephson junction, but in fact also a staunch publicist of psi): "Since there are satisfactory rational reasons for belief in psi, such as there now being good experimental evidence for psi for which critics have failed to find alternative explanations, investigating irrational ones seems beside the point."

None of this is likely to faze Humphrey, whose standing is secure among his professional peers. He is

a distinguished theoretical psychologist and a leading authority on the evolution of the brain, and he has held reading and research posts at both Oxford and Cambridge. In 1981 he was chosen to give the BBC's Bronowski lecture, and in 1987 he wrote and presented the comprehensive 90-minute television documentary "Is Anybody There?"—a searching investigation of paranormal claims.

He has held fellowships in the United States and Germany and was awarded the Glaxo Science Writers' Prize in 1980 and the Martin Luther King Memorial Prize in 1985.

On the very day of the *Times* interview this past May, Humphrey's latest book appeared: *A History of the Mind*. In it, he sets out to define the mind-body problem, and to solve it. Daniel Dennett (author of *Consciousness Regained*) has described the book as "brilliant, unsettling, and beautifully written. . . . Nobody else brings such an astonishing range of knowledge to bear on these issues."

It may not be 100-percent certain that we'll be hearing a lot more of Nick Humphrey, but that's surely the way to bet.

—*Lewis Jones*

Lewis Jones is a writer in London.

Former Jack Anderson Researcher Says 'Psi Gap' Stories Were a Hoax

Since 1981, syndicated columnist Jack Anderson has periodically told his readers about psychic research financed by the Pentagon and efforts by the Soviet Union to push for a breakthrough in psychic warfare. Skeptics tried to warn that these reports weren't all they might seem (*SI*, News and Comment, Winter 1985-86). But promoters of parapsychology have tried to use talk of a "psi gap" to persuade the U.S. government to do research on extrasensory perception (ESP). Now a former investigator for Anderson has admitted that he made up tales of psychic research to win a $10 bar bet.

Ron McRae, author of *Mind Wars*, wrote in the June 1992 issue of the irreverent magazine *Spy* that after becoming "convinced that many journalists lied, and that many journalists who didn't lie weren't very scrupulous about confirming the truth of what their sources told them," he bet a friend that there were no limits to what people would believe.

After learning that the CIA was spending $100,000 to study Soviet experiments on ESP and that the Navy was paying the Stanford Research Institute to study professional psychics, McRae wrote, "I invented my own psychic-research projects, and Anderson, convinced that I had remarkable sources in the Pentagon . . . printed my tale of a 'psychic task force' that was working to 'perfect psychotechtronic weapons that will work through extrasensory perception—like long-distance telepathic hypnosis to enslave enemy leaders.'

"A month later," McRae continued, "Anderson described the 'hyperspatial howitzer, which supposedly could transmit a nuclear explosion in the Nevada desert to the gates of the Kremlin with the speed of thought.' "

McRae said he won the bar bet, and later went on to concoct at least one other psychic contraption: a satellite-deployed dowsing rod (SADDOR), which was a Y-shaped rod sent into orbit that allowed psychics to hunt for enemy missiles and submarines.

Anderson, in his introduction to

McRae's psychic-warfare book, published in 1984 by St. Martin's Press, called McRae "one of the best investigators in the business."

McRae, writing in *Spy*, argued that *Mind Wars* "was generally accurate, apart from the sections on SADDOR and a few other items." He doesn't say what those "few other items" were.

After seeing similar cases in which anonymous sources were willing to verify information that McRae says he knew to be untrue, "the difference between my reporting and that of most other reporters, I concluded, was that I published firsthand fabrications, while the ones they published were secondhand."

McRae said that after recovering from a bout with depression he is back in journalism "reporting on matters of banking and finance, and I never quote an anonymous source."

—*C. Eugene Emery Jr.*

Gene Emery is a science writer for the Providence Journal. *(See also Psychic Vibrations column, this issue—Ed.)*

Photographic Proof? Not for Long

If you saw Steven Spielberg's *Hook*, 1991's holiday blockbuster movie, you may have been impressed with the fluidity and realism of its flying scenes. Robin Williams as Peter Pan (obviously not a stunt man) would swoop around those studio sets with the greatest of ease, while the camera wheeled gracefully around him.

How was it done? With a technology called "wire removal." Why should skeptics care? Because the digital visual-effects technology behind today's special effects films is poised to thrust all our old ideas about "photographic evidence" into the dustbin of history.

Until about 1990, flying an actor in a movie studio meant taking enormous pains to hide wires. Wire technology had remained unchanged for decades. Disney's *Son of Flubber*, a black-and-white comedy from the fifties, featured a convincing high school basketball game in which players could fly. The filmmakers pulled off dozens of flawless flying shots—but first they had to establish that this was the big homecoming game. That gave them an excuse to decorate the gymnasium set with thousands of strips of crepe paper, which hung vertically from the ceiling. The paper strips provided vertical "noise" that made spotting the wires impossible. Advances like color, the wide screen, and finer-grain film made it harder and harder for cinematographers to hide the wires. On the *Superman* pictures of the seventies and early eighties, the wires had to be so thin that they limited both the range of available flying maneuvers and the safety of the actors. (During production, one wire rig failed, dropping one of Christopher Reeves's doubles tens of feet onto a studio floor. Amazingly, the stunt man was unhurt.)

Of course there are other ways to make people appear to fly. For long shots, traveling matte techniques allow an actor photographed elsewhere to be inserted into any background imagery. Many of the large-scale shots of Superman flying Lois Lane over the city of Metropolis were done this way, with New York City predictably standing in for the Man of Steel's hometown. Another technique is process projection. A still or moving background is projected onto a screen behind the actor. This lends itself to closer shots. Today's savvy

viewers can often spot the degradation in the quality of the background image that goes with process projection. And the technique does not lend itself to shots in which the flyer must interact in complex ways with the projected background.

If you are a movie director and want your star to fly across a room, pick an acorn out of the ceiling rafters, and drop it in the villain's drink, there's no substitute for the kind of effects that people call "wire gags." As a director, your priorities are twofold. First, you don't want the wires to show. Second, you want the rig to be safe enough that you can fly your actual star, not a stunt double whose face needs to be hidden. New, digital techniques of manipulating imagery give today's directors previously unprecedented tools for achieving these shots.

What can you trust? Hoax photos have always been with us, but with new electronic technologies they are easier to create and harder to detect. Videotape faking is also now an emergent technology.

It all started with *Back to the Future II*. That picture featured dozens of shots with Michael J. Fox on a flying skateboard. To execute these shots, technicians at Industrial Light and Magic (ILM), George Lucas's cutting-edge special-effects facility, rewrote the book on flying scenes. On the set, director Robert Zemeckis simply flew his cast around on big, bulky, clumsy, *safe* steel rods, wire harnesses, and the like. All the hardware was allowed to show. Then ILM technicians scanned each frame of film into a powerful graphics workstation. Using proprietary software, they removed the rods and wires. They extrapolated background imagery from either side of the objects to fill in the spaces where the hardware had been. And it all worked invisibly, frame after frame, 24 frames for every second of screen time. Finally, each manipulated frame was laser-scanned back onto 35mm or 70mm film negative. Cut into the finished picture, these highly manipulated shots matched perfectly with "virgin" first-generation footage. You never saw the wires, and you never saw where they'd been removed.

Which brings us to *Hook*. Unencumbered by the need to make wires invisible to the camera, Spielberg's technicians concentrated on building a flying rig that would do just about anything—and do it with such a margin of safety that Robin Williams could do most of the flying himself. All Spielberg had to worry about was getting the moves and the performance right. The techno-pixies at ILM would take care of everything else. If you saw the movie, you know it worked.

Wire removal has figured in numerous big-budget films. The zero-gravity assassination sequence in *Star Trek VI* used wire removal as well as computer graphics to create the floating blobs of "blood" that spilled from the floating Klingon victims. The

slow-motion sequence in *Terminator 2* in which Arnold Schwarzenegger jumps a motorcycle off a bridge and into the dry bed of the Los Angeles River was not slow motion at all; the bike was held in a bulky steel cage, suspended from thick cables, and lowered on a crane at about the speed you see on the screen. Then all the support hardware was removed.

Nor is wire removal limited to flying shots. Preview audiences laughed at a shot from *Batman Returns* in which the Batmobile careened out of control down an alley, scattering parked cars as it went. The thick steel cables used by the filmmakers to flip the full-scale automobiles showed clearly. When the film was released, the wires were gone. ILM didn't do this sequence; the wire removal for *Batman Returns* was performed by Los Angeles-based Boss Films, probably ILM's foremost competitor. The technology is getting around.

New technologies like digital wire-removal have made for some fine entertainment—and for rising anxiety among specialists in visual forensics. Suppose someone with access to this level of technology created a phony UFO photograph. If the faker was skillful, neither the photo nor its negative (previously the Achilles' heel of photo manipulators) would betray any signs of the manipulation they had undergone.

Picture-massaging technology almost as sophisticated as the equipment at ILM is already in use at service bureaus, in corporations, and on college and university campuses. It's a sizable installed base, much of which is good enough to manipulate 35mm negatives at snapshot resolution. With the ubiquity of camcorders, which produce low-resolution moving imagery already in electronic form, an increasing number of extraordinary claims, criminal prosecutions, and the like, will hinge on a form of evidence that's even easier to manipulate. Finally, electronic still cameras are beginning, however slowly, to move into applications that once belonged exclusively to silver-halide film technology. These devices produce graphics files, not negatives—the ideal format for easy manipulation.

The days when a skilled photo-analyst could be sure of detecting a doctored image may soon be history. The next Rodney King-style scandal could be set in motion by faked camcorder footage and the fakery may prove difficult or impossible for authorities to detect. While we wait for that, skeptics can occupy themselves wading through what I'm sure will be a growing stream of increasingly better-quality "proof-shots" of ghosts, levitations, UFOs, and who knows what else.

—*Tom Flynn*

Tom Flynn is director of Inquiry Productions. Flynn recently completed production of the CSICOP video "Beyond Belief: Explorations in the Paranormal." This is an expanded version of an article originally published in the CSICOP newsletter, Skeptical Briefs.

Miraculous Signs in Cold Spring?

August 31, 1992, came and went in the northern Kentucky community of Cold Spring, where an estimated 7,000 folks gathered at midnight in the parking lot of St. Joseph's Catholic Church in expectation of a miracle. However, the promised visitation of the Virgin Mary did not come to pass, according to the dioce-

An estimated 7,000 pilgrims attended a midnight vigil for the Virgin Mary on August 31, 1992, at a church in Cold Spring, Kentucky. (Photo by Joe Nickell.)

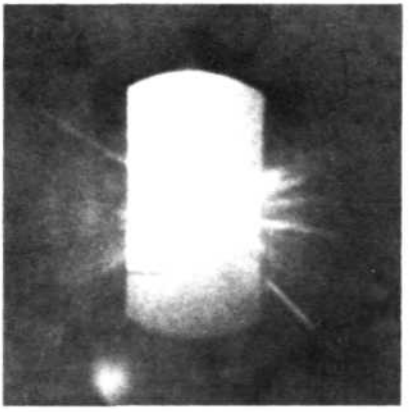
san bishop, William A. Hughes.

Bishop Hughes had earlier enjoined St. Joseph's priest, the Reverend Leroy Smith, to silence in the affair, which began the previous month. Smith had announced that an anonymous "visionary" had told him the Blessed Virgin would appear inside the church at the appointed time.

With huge throngs being forecast, the city adopted special ordinances to protect residents and their property, the local police requested help from the National Guard, and souvenir hawkers readied their wares—one replacing his best-selling goose figures with religious statuettes. For their part, church officials limited attendance inside St. Joseph's to approximately 1,000 to 1,500 parishioners on an invitation-only basis, the news media and spectators being restricted to the church grounds.

Despite some misgivings about the restrictions, I decided to attend—not because of the religious nature of the event but in order to assess whatever paranormal claims might be made. The Rocky Mountain Skeptics visited the Cabrini Shrine near Denver and the Georgia Skeptics went to Conyers, Georgia, for the same reason.

Although the original prediction was for a message, not an apparition, and although the bishop officially concluded—after conferring with the Reverend Smith—that "nothing of a miraculous nature" had occurred at the church, some of the charismatic Catholics who gathered outside clearly thought otherwise. As I mingled with the spectators both



Photographs of the "Golden Door," like the one shown here, were among the "signs" supposedly given by the Virgin Mary at Cold Spring. The shape, however, is merely that of the iris of the Polaroid One Step camera used to take them.

during the afternoon of the thirty-first and the period before and after the midnight hour, I learned there were many paranormal experiences being alleged. This was not unexpected, since many in attendance had previously visited the Marian apparition site of Medjugorje (before the war in what had been Yugoslavia turned it into a virtual ghost town), and Medjugorje T-shirts, banners, and literature were much in evidence. Indeed, the Reverend Smith had himself made nine trips to Medjugorje.

During the afternoon there were reports of "sun miracles" as well as of photographs purporting to depict either the Virgin Mary or what is sometimes called the Golden Door, or the Gateway to Heaven, and of rosaries and crucifixes turning from silver to gold. Then around midnight many saw bright lights that they claimed were evidence for a Marian visitation—in the form of the "Lady of Light," as she was depicted on a souvenir Cold Spring T-shirt hastily silk-screened for the occasion.

As it turned out, the proffered "signs" all had mundane explanations. For example, in the past rosaries that have supposedly been transmuted into gold have been discovered to have been merely tarnished or to have had their thin surface plating of silver worn away by repeated handling so that the underlying brass or copper was exposed. On other occasions, it appears that the experient may deliberately or mistakenly have misrepresented the metal's original color.

Again, the wispy shapes in some instant-camera snapshots that some interpreted as the face or figure of Mary were obviously due to lens flares (i.e., the result of interreflection between lens surfaces) or to other artifacts.

The Golden Door images were much more striking. Although such pictures resulted from pointing the camera directly at the sun, the resultant images were not disc-shaped but rather straight-sided forms that many believed represented the "door . . . opened in heaven" (as referred to in Revelation 4:1). However, as Georgia skeptic Dale Heatherington has ably demonstrated, the shape is merely that of the iris of the Polaroid One Step camera used to take such pictures! (Heatherington readily duplicated the effect, even producing one "golden door" picture by photographing a halogen spotlight in a dark room.)

As to the "bright lights" and related "apparitions" reported around midnight, these seemed the least surprising of all. Described as "almost like a lightning flash" or, collectively, "almost . . . as if there were a light show," the effects were just what I, too, experienced: At midnight, countless spectators and news photographers tripped their electronic flashes—ironically in hopes of capturing the expected miracle on film.

—*Joe Nickell*

Joe Nickell is completing his ninth investigative book, a critical look at modern miracles.

Maharishi Followers Try Presidential Run

With Ross Perot's July withdrawal speech still echoing from the nation's television sets, a new political party announced that it had a presidential ticket with good looks and novel ideas for solving America's problems.

The Natural Law Party billed itself as "the first political party in the nation based on sound scientific principles and scientific research." A press release sent to major newspapers announced that the party "is gaining considerable strength across the nation" with its plan to "bring the light of science into politics."

The press release said the party was based in Fairfield, Iowa, but it didn't reveal that Fairfield is the U.S. headquarters for the Transcendental Meditation cult, founded by the Maharishi Mahesh Yogi.

It identified the presidential candidate as John Hagelin, "a Harvard-trained quantum physicist," but didn't reveal that Hagelin is a guru at the Maharishi International University (MIU) in Fairfield.

The only direct hint of a connection to the cult came when the press release said the party would hire people to practice TM to "create a calming influence in the city" and to produce "a significant reduction in negative tendencies, such as crime, sickness, and accidents, and a strengthening of positive social and economic trends in the population as a whole."

The press release also didn't tell people that in the Maharishi's unconventional view of "science," large groups of avid meditators can psychically impose inner tranquillity on hostile nations, the entire physical world can be summed up in one long pseudo-equation, and meditators can learn to float in the air and halt the aging process.

The press release also claimed that the party had 40 candidates running for Congress and implied it was on the presidential ballot in 11 states.

Why were they doing it? One clue may have been in a fund-raising letter mailed last June to followers of the Transcendental Meditation movement and people who buy the Maharishi's brand of herbal medicines. Natural Law Party Chairman and MIU President Bevan Morris said, "Any contribution you make up to $250 will be matched dollar for dollar by the United States government."

It was not clear whether the party had qualified for federal matching funds when Perot made his withdrawal announcement.

—*C. Eugene Emery Jr.*

Associated Press Twists Facts For Hurricane Prediction

The Associated Press is apparently unwilling to let the facts get in the way of a good story when it comes to reporting on the weather predictions in *The Old Farmer's Almanac.*

In a dispatch from New Hampshire about the *Almanac*'s latest issue, which was given prominent play by Cable News Network and other news outlets, AP said the *Almanac* was "fresh off its prediction of Hurricane Andrew," because the 201-year-old publication had "warned of a possible hurricane in south Florida the last week of August."

The AP also reported the *Almanac*'s claim that its predictions have an "80 percent accuracy."

If readers had known about the *Almanac*'s actual Florida forecast when the hurricane hit on August 24, they might have been less impressed with both the accuracy of the *Almanac*'s predictions and AP's reporting.

The forecast for August 23-27: "Thundershowers, milder."

The reference to "possible hurricane south" was not for "the last week of August," but for August 30-31, a week after Andrew.

Was this a near-coincidence blown out of proportion, or did the *Almanac* deserve credit for a prediction that was just a little off (which might be understandable considering that the forecast was written a year in advance)?

Consider the *Almanac*'s typically vague predictions for Louisiana. When Andrew actually struck on August 26, the weather was supposed to be "partly cloudy, showers; milder." The forecast for September 1 (when Andrew would have hit Louisiana if it hadn't arrived a week "early" in Florida): "Sprinkles, hot."

By making the *Almanac*'s prediction appear better than it was, AP resorted to the same tactics the tabloids use to justify their sensationalized stories.

In fact, the *Almanac* couldn't even forecast the weather in its own backyard.

New England's summer of 1992 was one of the coldest in years. The *Almanac* said the region would have warm weather from April through August.

—*C. Eugene Emery Jr.*

Gene Emery is a science writer for the Providence Journal.

Testing a 'Psychic' On Italian TV

I recently had the opportunity to test one of the most famous psychic phenomena of the 1970s, that is, the effect produced in the homes of viewers by the powers of a "psychic" appearing on TV.

As the investigator for the Italian Committee for the Investigation of the Paranormal (CICAP) and a skeptical conjurer, I was invited to be on the popular evening TV show called "L'Istruttoria" ("The Inquest," on the Italia 1 network). With Giuliano Ferrara, the host, it was agreed that I would be presented to the public as a "psychic." To prove it, I performed several feats: the bending and breaking of a spoon, the watch trick (changing the time on your watch while you hold it in your hands), and the divination of a drawing made by the host, which I had not been able to see. I also made some radish seeds germinate in my hand.

After this exposure of psychic potential, the ground was fertile for the expected phenomenon. I invited the viewers to bring broken watches and cutlery to their TV sets, and then I told them that while I concentrated "something" would happen in their homes: the watches might start working again, the cutlery might become bent, or other strange phenomena

could take place.

The viewers were then invited to call the show and report if anything occurred. As expected, the switchboard became jammed in a matter of seconds, and the operators started to collect calls from all around Italy. In less than an hour they had received more than 60 calls (an average of a call a minute) reporting that "broken" watches had been fixed, spoons had mysteriously bent, and other unusual phenomena had taken place: a TV set suddenly turned off, a glass of water started to boil while I was talking, two forks had misplaced themselves, a watch strap broke, a clock's pendulum fell to the floor and broke, and so on.

This once again demonstrates the powerful psychological effect of suggestion. Anyone can convince those willing to believe that otherwise normal happenings can be interpreted as being paranormal if it is suggested that they are and if the request is placed in the correct context.

It goes without saying that at the end of the show I revealed the hoax.

—*Massimo Polidoro*

Massimo Polidoro (Via Garibaldi, 42, 27058 Voghera [PV], Italy) is a magician and the investigator for the Italian Committee for the Investigation of the Paranormal (CICAP).

For the Record

The map of the Marfa, Texas, area on page 405 of our Summer 1992 issue was taken by permission from *The Marfa Lights*, 2nd rev. ed., by Judith M. Brueske (Ocotillo Enterprises, P.O. Box 194, Alpine, TX 79831). □

Editor's Notebook

Look for *SI* in Bookstores. For most of our existence, we have been a nearly exclusively subscription-only publication. Subscribers have been uncommonly loyal, and renewal rates are quite good. To increase our visibility and outreach to new audiences, however, in addition to our continuing direct-mail campaigns we now are broadening our circulation efforts to quality newsstands. Newsstand circulation started quite small but is now growing steadily, from 1,633 copies of Winter 1992 to 3,200 of Winter 1993. CSICOP Executive Director Barry Karr estimates that *SI* is now carried in about 625 bookstores.

A New Printer for *SI*. Certain mechanical requirements of the new printer of the SKEPTICAL INQUIRER, starting with this issue, have resulted in our changing to a high-opacity lighter-weight paper. The number of pages per issue has not changed.

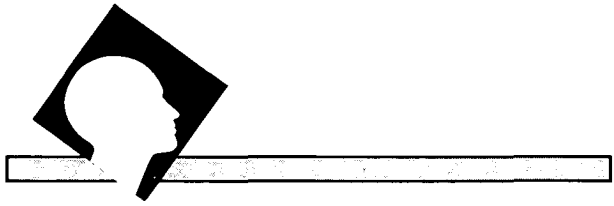
—*K.F.*

WE VALUE YOUR OPINION

Our readers are our most important asset. If you have some thoughts about the SKEPTICAL INQUIRER, please share them with us. Are there subjects we have neglected? Are there matters you think we give too much attention? What would make the SKEPTICAL INQUIRER a better magazine.

Please put your ideas in a letter and mail it to: Kendrick Frazier, Editor, SKEPTICAL INQUIRER, 3025 Palo Alto Drive N.E., Albuquerque, NM 87111.

CSICOP News



Skeptics Analyze Tools for Analysis and Persuasion

"The Skeptics Toolbox," a five-day seminar chaired by psychologist Ray Hyman and held at the University of Oregon in Eugene in August, challenged skeptics to rethink their aims and strategies as well as their basic belief in rational thought. It was the latest of a series of workshops/seminars given by the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) under the auspices of the Institute for Inquiry.

One outcome of the seminar may be a book tentatively titled *The Compleat Skeptics' Field Guide.* At the end of the program, participants and faculty pooled their ideas on the possible contents of this prospective handbook.

The "tools" described by the five major speakers covered not only the mental tools for detecting deception and unfounded claims, but also guidelines for determining what action, if any, should be taken, defining the goals of any action, and persuading believers to adopt a more questioning viewpoint.

Running through many of the discussions was the feeling that skeptics need to project a more favorable image of their attitudes. Many people view skeptics as diehard cynics and debunkers, even as enemies of free speech. Nonskeptics often hear only the "COP" in CSICOP.

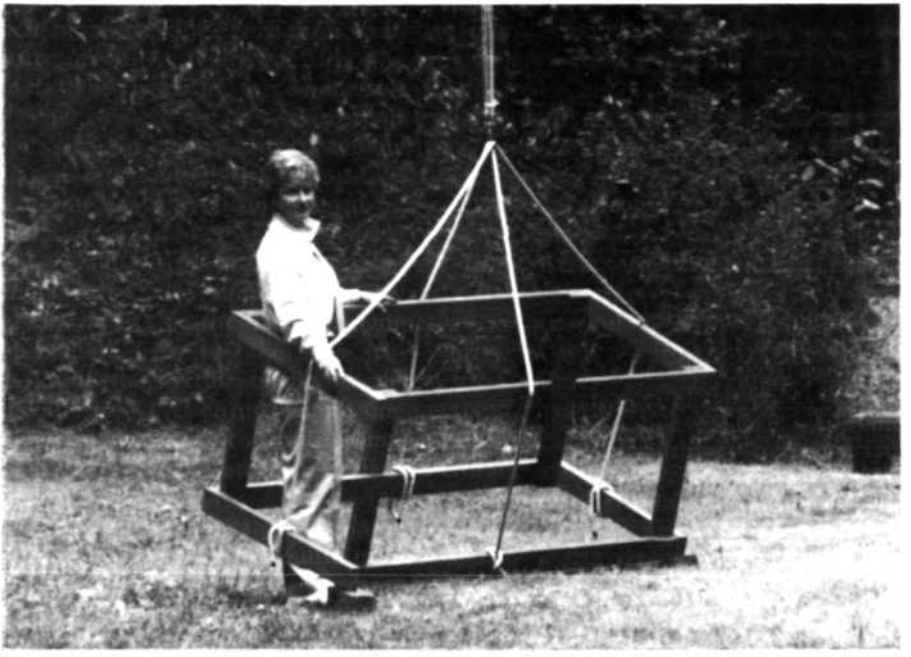
In discussing effective ways of communicating the skeptical viewpoint to other audiences, Jeff Mayhew of Portland Oregon, who applies audio-visual communications and computer graphics to the skeptical cause, stressed the importance of knowing the audience, carefully defining the goal of the presentation, and getting some measurement of the results.

"Beware of the sacred cow," he said. "A person who has undergone a traumatic near-death experience is unlikely to believe the skeptic who says it was a quirk of the physical brain. If you challenge beliefs your audience won't discard, you weaken your ability to change beliefs they might be willing to discard."

Displaying a slide listing 58 different types of paranormal claims, Mayhew cautioned that a speaker not be trapped into being seen as posing as an "expert on everything," because opponents can easily ask questions about some subject in which the skeptic is ignorant.

Barry Beyerstein, professor of psychology at Simon Fraser University in Burnaby, British Columbia, described psychologists' "unified theory" about the human brain. This theory holds that all mental phenomena are products of the physical brain and that when the brain is destroyed or severely damaged, consciousness ceases forever.

Most paranormal beliefs oppose



The crate shown is made of straight two-by-fours. Each one is a complete board and none of them go at any strange angle. There is no retouching or trick photography. Note that the photo shows the back upright on the right as if it were in front of the horizontal two-by-four. Also, the left front of the upright seems in back of the back lower two-by-four. See if you can figure out how this can be. (Photo by George Andrus.)

this theory, holding that the mind is distinct from the brain and can escape to other locations, and even other lifetimes. But the physical-brain viewpoint, Beyerstein said, is supported by evolution, by the development of the individual human being, by pharmacological experiments, and by research on the effects of accidents affecting the brain.

Loren Pankratz, clinical psychologist with the Veterans Administration in Portland, analyzed the personality styles of deceivers. Earliest, he said, were those who claimed to be powerful magicians, before magic became simply entertainment. Later were those who deceived by personal charm, and others who relied upon inventiveness and boldness.

Discussing "The Pleasures of Quackery," Pankratz pointed out that testimonial evidence is valueless: "You can get somebody to testify to almost anything." The federal government, he reported, will take action against the manufacturers of fake cures, but leaves it to the states to prosecute the individual dispensers of them.

In a session on "Critical Incidents," participants described a variety of ways in which they have been confronted with claims of the paranormal, and an equal number of ways in which they reacted to them. Many participants felt that how best to respond to such claims is an area that CSICOP could pursue.

Since deception is one of the targets of skeptical inquiry, there were plenty of examples of it in the form of magic. Outstanding was the "impossible box" created at a local park on the seminar's field trip by Jerry Andrus, magician and creator of ingenious illusions. Many seminar participants were

The camera used for this photo was on a tripod and not moved between taking the first photo and taking the second. The plank is level. All that took place between the two exposures was that the two people changed places on the plank. (Photos by George Andrus.)

photographed standing inside the box, which created an optical illusion in which the slats forming the sides appeared to be put together in a manner that defied all laws of reason. Another shows two people standing on opposite ends of a *level* plank whose relative heights change markedly when they switch positions. (See photos.)

In one interesting breakout session, participants wrestled with the problem of how to set up a test of alleged psychic powers? Suppose a psychic says he or she can look at a person and tell something about that person's past. How do you establish criteria of accuracy upon which both you and the psychic can agree? It isn't easy.

Hyman, psychology professor at the University of Oregon and a well-known investigator of paranormal claims, discussed the psychology of deception, giving interesting descriptions of con games like three-card monte. He also gave a demonstration of psychic reading and explained how anyone can do it.

Members of the audience suggested tactics for use against ardent believers. At a psychics' conference, one skeptic was approached by a psychic who asked, "Would you like me to give you a reading?" The skeptic's response: "Not if you have to ask the question."

To a believer who insists that skeptics are closed-minded, one skeptic's answer is: "I'm eager to receive and examine your evidence, but you haven't heard a word I said. Who is the more open-minded?"

On the other hand, many skeptics would agree with the quotation displayed on the screen during a break: "If you keep your mind sufficiently open, people will throw a lot of trash into it."

This was the largest—and longest—CSICOP seminar to date. More than a hundred people participated, from 19 states, Canada, and Hong Kong, and their enthusiasm continued to grow with each passing day, ending on the fifth day with what appeared to be a unanimous "If only we had more time!"

—*Porter Henry*

Porter Henry participated in the Oregon seminar. He lives in Cincinnati, Ohio.

Italian Alps Site of Fourth EuroSkeptics Conference

The Grand Hotel Billia is situated in the town of St. Vincent, in the beautiful and historic Aosta Valley of the Italian Alps. For a few glorious days in the summer of 1992, this classic European resort hotel was home to skeptics from throughout Europe, as well as to a few fortunate invited guest speakers from North America.

On July 17-19, the Second National Conference of the Comitato Italiano per il Controllo delle Affermazioni sul Paranormale (CICAP) and the Fourth European Conference of EuroSkeptics were held conjointly at the Grand Hotel Billia, in the Centro Congressi, a modern and attractive conference center attached to the hotel. Simultaneous translation was provided throughout the conference by two professional interpreters, and by using the latest in audio headphone equipment.

Four separate consecutive sessions were held. The first focused on astrology, with speakers from Italy (physicist A. Piazzoli and anthropologist C. Gatto-Trocchi) and Holland (J. W. Nienhuys, who spoke about the moon and birth rates). In the evening, James Randi and Piero Angela, Italy's best-known and highly esteemed television broadcaster, entertained and educated the audience. Randi spoke about recent developments on the paranormal front and gave a very enjoyable conjuring display. The talk given by Piero Angela, as part of his discussion of the need to foster critical thinking, featured an amusing cartoon, which he had himself produced and which extolled the virtues of skepticism.

The next day, the second session, on extrasensory perception, was introduced by Paul Kurtz, and among the speakers were Ray Hyman, from the United States, who gave the audience some excellent insights into the problems of parapsychology and how critics should approach them; B. Premanand, from India, who spoke about the Indian Godmen, complete with demonstrations of Yogi-type "miracles," including putting his arm into fire; Henri Broch from France, whose talk explored the realm of extraordinary claims and beliefs; and Amardeo Sarma, from Germany, who described ways of testing paranormal claims.

The third session focused on psychokinesis and related phenomena. I offered a critical commentary on modern research into psychokinesis, and Chip Denman, of the United States, spoke on the topic of the weeping icon that he and the National Capital Area Skeptics, an independent skeptics group in Washington, D.C., had recently investigated. Then Massimo Polidoro, a magician and CICAP investigator, provided some fascinating glimpses into psychokinesis demonstrations by means of some rare video clips

The final session examined parapsychological experimentation, with presentations by James Randi (who discussed the necessary precautions for testing psychics), Italian physicist A. Piazzoli (who spoke of proof and counterproof in experimentation), Italian psychologist R. Luccio (who spoke about the use of statistics in parapsychological research), and L. Garlaschelli, an Italian chemist who described the chemistry involved in miracles of "liquefying blood."

The conference was a rousing success, and credit for its organization

An Appeal to Scientists by EuroSkeptics Conference

This statement is issued at the conclusion of the Congress of CICAP (Comitato Italiano per il Controllo del Affermazioni sul Paranormale) and EuroSkeptics, representing science-oriented skeptical organizations from seventeen countries, July 19, 1992, at Saint Vincent, Italy.

In response, to the basic question, *What is the experimental evidence for the paranormal?* we submit that what is available is insufficient, inconsistent, and inconclusive.

Therefore we suggest that the scientific community has a professional and social duty to express itself about the unchallenged growth of paranormal and pseudoscientific claims to fill the gap between science and popular opinion. Indeed, significant sectors of the public throughout the world believe that "paranormal phenomena" have been proved by science, and there is a continuing abuse of scientific language by pseudoscientists.

Scientists should be open to the investigation of any responsible claim about alleged anomalous phenomena, or at least they should support their colleagues who critically examine paranormal claims. When, in the past, scientists and their organizations have applied their expertise to question ill-founded notions, they have usually proved effective.

Where there is clearly insufficient evidence, or when a specific claim has been falsified, scientists should convey this knowledge to the public. This is particularly important when the media sensationalize these claims, and when there is commercial exploitation by astrologers, psychics, spurious medical healers, and other pseudoscientific practitioners.

Scientists should also promote governmental and public support for scientific education and foster critical thinking to enable the general public to distinguish science from pseudoscience.

This statement was drafted and signed in July 1992 by all of the contributors to the Fourth EuroSkeptics Conference.

and coordination goes to Steno Ferluga, of the Department of Astronomy, University of Trieste, and Victor Balli, from Torino. Those of us who were invited from North America were grateful for the considerable assistance offered to us by Ferluga and by Massimo Polidoro.

Under Ferluga's guidance, a statement was drawn up calling on scientists throughout Europe to promote skeptical discussion and inquiry into supposed paranormal phenomena.

Skepticism is alive and well in Europe. Congratulations to our Euro-colleagues for a job well-done.

—*James E. Alcock*

James Alcock is a professor of psychology, Glendon College, York University, Toronto.

Notes of a Fringe-Watcher

MARTIN GARDNER

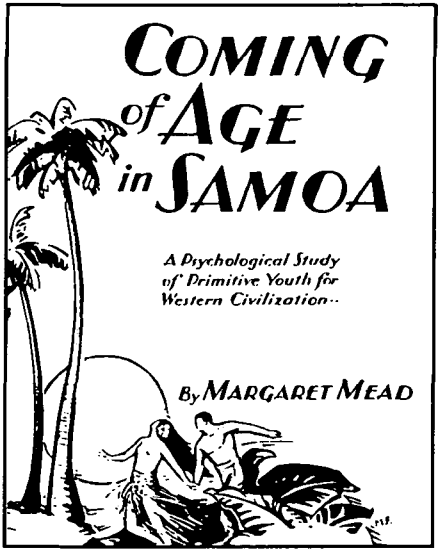
☐ *The Great Samoan Hoax*

In an earlier column on Margaret Mead (*SI*, Fall 1983, reprinted in my book *The New Age*) I focused mainly on Mead's occult beliefs and her conviction that the earth is being observed by extraterrestrials in flying saucers. Only a brief mention was made of Derek Freeman's *Margaret Mead and Samoa: The Making and Unmaking of an Anthropological Myth* (Harvard University Press, 1983). This explosive book roundly trounced Mead for flagrant errors in her most famous work, *Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilization* (Morrow, 1928).

Since I wrote that column, new and irrefutable evidence has come to light supporting the claim that young Mead was indeed the gullible victim of a playful hoax. Her book, until recently considered a classic, is now known to be of minimal value—an amusing skeleton in anthropology's closet.

Mead was 23 in 1925 when she went to Samoa as a Columbia University graduate student working under Franz Boas, then the nation's most eminent anthropologist. At that time cultural anthropology was in the grip of an extreme environmentalism, understandable as a reaction against earlier ethnocentric anthropologists who faulted alien cultures for failing to conform to the values of the anthropologists' own society. Boas could not accept the notion of a biologically determined human nature that would provide the basis for ranking cultures in terms of how well they met human needs. Genetic elements, Boas wrote in *The Encyclopedia of the Social Sciences*, are "altogether irrelevant as compared with the powerful influence of environment."

For Boas and his protegée Mead,



The jacket of the first edition of Mead's book shows two young Samoans, bare above the waist, romping under a full moon toward a tryst under the palm trees.

human nature consisted entirely of such body needs as food, water, and sex. How a culture copes with those needs was seen as enormously varied in ways that could not be evaluated across cultural boundaries. In brief, for Boas there were no universal human values.

This extreme view, known as "cultural relativism" or "cultural determinism," poses obvious difficulties. How, for example, can a relativist condemn slavery, seeing that slavery was integral to so many great cultures from ancient Greece to our own nation's South before the Civil War? How can a relativist object to the racism of Hitler's Germany, the torturing of heretics by the Inquisition, or the burning and hanging of witches? However, this is not the place to discuss the defects of cultural determinism. Instead, I shall stress the fresh evidence that Mead was shamelessly hoodwinked by two Samoan pranksters.

Derek Freeman, an Australian anthropologist, summarizes this new evidence in three papers: "Fa'apua'a Fa'amu and Margaret Mead," in *American Anthropology* (December 1989); "There's Tricks i' th' World" (a quote from Hamlet), in *Visual Anthropology Reviews* (Spring 1991); and "Paradigms in Collision," in *Academic Questions* (July 1992). It is from these articles that I take what follows.

When Mead visited Samoa she was under the impression, based solely on hearsay, that Polynesians were as sexually promiscuous as anthropology graduate students. Because she thought their sex lives were unrestrained, Mead was convinced that Samoan adolescents never suffered the anxieties and torments of Western teenagers. Her mentor, Boas, sent her to Samoa for the express purpose of confirming this view, thereby providing strong support for his radical cultural determinism.

Because Mead spoke very little Samoan, she conducted most of her interviews through interpreters. Her principal informants were two native "girls" (as Mead herself called them), Fa'apua'a Fa'amu, who spoke English, and her friend Fofoa, who did not. All three "girls" were about the same age. In a letter, Mead called the other two her "merry companions."

Embarrassed and offended by Mead's constant questions about sex, a taboo topic in Samoa, the two merry companions decided to play on Mead what they thought would be a harmless joke. Such pranks on outsiders were and are a common form of Samoan fun. The two girls had no inkling that Mead was an anthropologist who would go home and write a book about what they told her. To them she was just a young, naive, meddlesome tourist.

With sidelong glances at each other, and lots of giggling, the two merry companions told Mead everything she wanted to hear. Yes, adolescents had complete sexual freedom, moving stress-free from childhood to adultery. Samoans were a happy, free-love people. Poor Mead bought it all. Samoa, she wrote in her book, is "a casual, problem-free society" in which the ambition of every adolescent girl is "to live with as many lovers as possible" before she marries. Even after wedlock sexual freedoms are permitted. Not only was the book avidly read by our nation's "flaming youth," eager for sex without commitment, but anthropologists praised it to the skies. In his foreword to the book Boas called it a "painstaking investigation" of a "culture so entirely different from our own." Bertrand Russell, Havelock Ellis, H. L. Mencken, and other famous writers joined in the chorus of adulation.

After Mead's book appeared, dis-

turbing news began to emerge from more qualified investigators of Samoan life. Unanimously they concluded that Samoan society was exactly the opposite of what Mead had portrayed. It was a culture of strict parental controls and unbending sex taboos. Female virginity was so highly prized that brides were tested for virginity before they were allowed to marry! Adolescents in Samoa had the same difficulties in coming of age as they had in Western lands. But so great was Mead's growing reputation as the nation's top female anthropologist, and so firmly entrenched was cultural relativism among anthropologists and sociologists, that Mead's book remained an admired work for more than half a century. It is still in print in both hardcover and paperback editions.

Freeman's book, the first to accuse Mead of having been flimflammed, aroused his colleagues to unbelievable fury and vindictiveness. Freeman was called "crazy," "fueled by academic venom," a person who "threw nothing but spitballs." He was accused of bribing Samoans to support his bizarre opinions and of having "attacked a missionary with an axe." Melvin Ember attacked Freeman in "Evidence and Science in Ethnography: Reflections on the Freeman-Mead Controversy," in *American Anthropologist* (vol. 87, 1985, pp. 906-909).

At the 1983 meeting of the American Anthropological Association, in Chicago, a special session was devoted to vilifying Freeman. Later that day a motion was passed denouncing his book as "unscientific." Here is how British philosopher Karl Popper reacted in a letter to Freeman:

> Many sociologists and almost all sociologists of science, believe in a relativist theory of truth. That is, truth is what the experts believe, or what the majority of the participants in a culture believe. Holding a view like this your opponents could not admit that you were right. How could you be, when all their colleagues thought like they did? In fact, they could *prove* that you were wrong simply by taking a vote at a meeting of experts. That clearly settled it. And your facts? They meant nothing if sufficiently many experts ignored them, or distorted them, or misinterpreted them.

Not until 1987 was Freeman completely vindicated. Fofoa had died in 1936, and Fa'apua'a was presumed also dead. To Freeman's surprise she was very much alive and eager to talk. For decades, she said, she had been burdened with guilt over the huge success of Mead's book, and now was relieved at last to be able to tell her story. A lifelong Christian, she swore to the truth of her account with a hand on a Samoan Bible.

When Mead intimated that Fa'apua'a was promiscuous, Fa'apua'a was shocked. At that time she was what in Samoa is called a *taupou*, or ceremonial virgin. After comprehending what Mead wanted them to say, the two girls decided to play a typical Samoan prank on this curious young woman from America. They never dreamed that Mead would base an entire book on their lies.

When Larry Gartenstein interviewed Fa'apua'a for his article "Sex, Lies, Margaret Mead, and Samoa," in *Geo* (June–August 1991), the elderly woman, now a grandmother and nearing 90, said that when Mead asked where she and Fofoa went at night they would pinch each other and say, "We spent our nights with boys, yes, with boys!" Samoan girls, Fa'apua'a added, "are terrific liars when it comes to joking. But Margaret accepted our trumped-up stories as though they were true. Yes, we just fibbed and fibbed to her."

Had Mead ever pressed her two merry friends for verification of their lies, Fa'apua'a said, they would have at once confessed, but Mead never challenged anything. She just scribbled it all down avidly in her notebooks. There was a rumor that Mead had an affair with a young Samoan. It is not known if this is true, but Fa'apua'a said she and Fofoa firmly believed it, and this made them feel less hesitant in hoaxing their visitor.

On three occasions Mead was made a "ceremonial virgin" of Samoa. These honors, which she greatly enjoyed, would never have been conferred on her if she had revealed that she was married at the time! It is said that Mead, during one of the ceremonies, danced about bare-chested.

Cultural relativism may be dying a slow death as more and more anthropologists and sociologists rediscover what they could have learned decades ago from John Dewey, a strong believer in a common human nature as a foundation for a naturalistic ethics. Here are some passages from Dewey's essay "Does Human Nature Change?" in *Problems of Men* (Philosophical Library, 1946):

> The existence of almost every conceivable kind of social institution at some time and place in the history of the world is evidence of the plasticity of human nature. This fact does not prove that all these different social systems are of equal value materially, morally, and culturally. The slightest observation shows that such is not the case.
>
> . . . By "needs" I mean the inherent demands that men make because of their constitution. Needs for food and drink and for moving about, for example, are so much a part of our being that we cannot imagine any condition under which they would cease to be. There are other things not so directly physical that seem to me equally engrained in human nature. I would mention as examples the need for some kind of companionship; the need for exhibiting energy, for bringing one's powers to bear upon surrounding conditions; the need for both cooperation with and emulation of one's fellows for mutual aid and combat alike; the need for some sort of aesthetic expression and satisfaction; the need to lead and to follow, etc.
>
> Whether my particular examples

are well chosen or not does not matter so much as does a recognition of the fact that there are some tendencies so integral a part of human nature that the latter would not be human nature if they changed. These tendencies used to be called instincts. Psychologists are now more chary of using that word than they used to be. But the word by which the tendencies are called does not matter much in comparison to the fact that human nature has its own constitution.

Freeman points out that back in 1945 anthropologist G. P. Murdock provided a long list of universals common to all known cultures. A similar case for them was made by Donald Brown in *Human Universals* (1991). Still another defense can be found in Irenaus Eibl-Eibesfeldt's massive *Human Ethology* (1989).

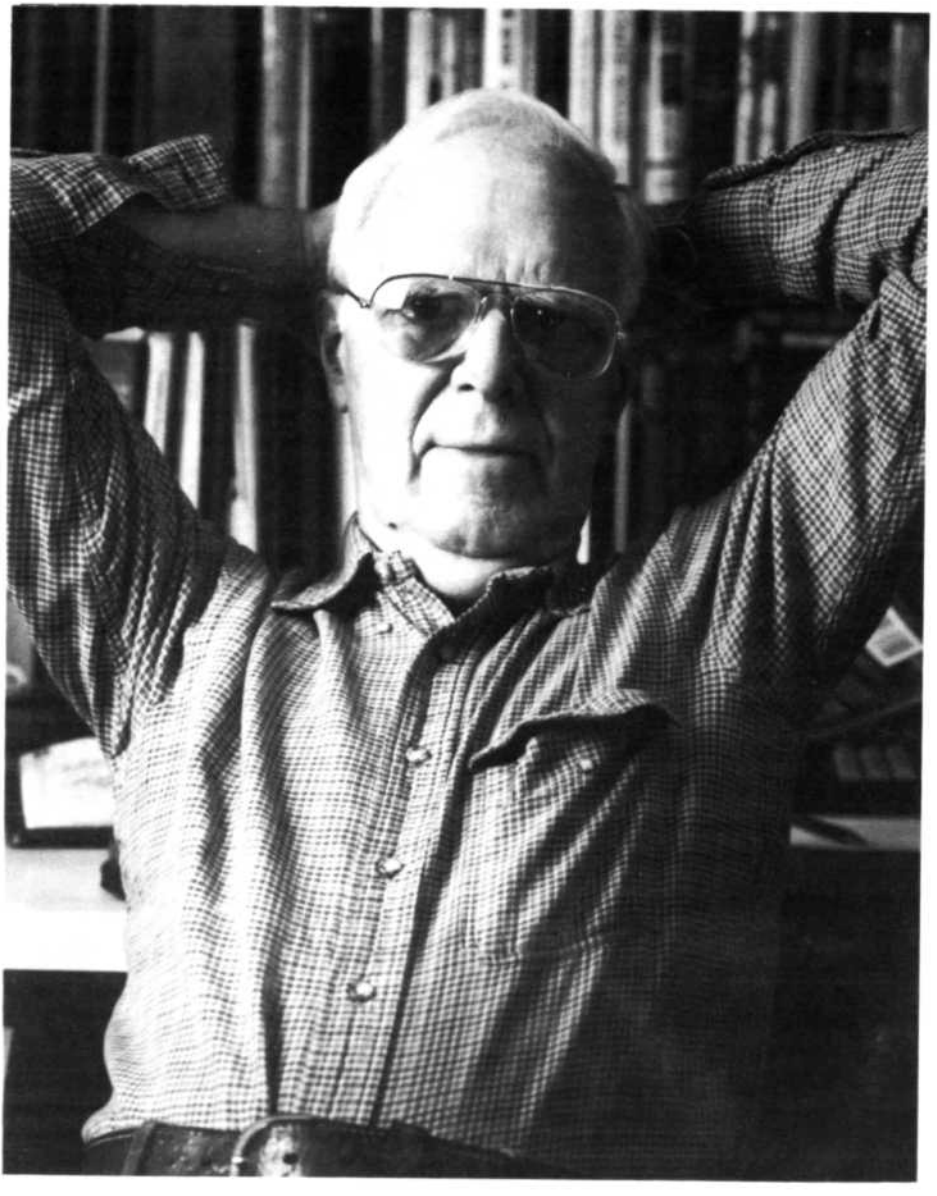
Freeman quotes an anthropologist as saying, "There is no such thing as human nature independent of culture." Obviously true, Freeman agrees, but the same truth can be put the other way around: "There is no such thing as culture independent of human nature."

Freeman believes that what he calls an "interactionist paradigm shift" is now taking place in anthropology. The crude, outdated relativism is slowly giving way to the sensible view that cultures arise from an interplay of genetics and environment. Perhaps the time is approaching when cultural anthropologists will have the courage to declare, without shame, that evils like slavery, racism, infanticide, and genocide are not value-free customs comparable to such folkways as traffic regulations and fashions in dress, but behavior that can be condemned on the basis of values common to humans everywhere. □

Sociology as Ideology

Sociology is rapidly becoming nothing more than a series of ideological claims that do not merely fail to address the relevant evidence but claim the opposite of what the evidence suggests. Authors of introductory sociology textbooks seem to care more that their students believe that which (the author thinks) is good for the student than that which is true.

—Steven Goldberg, *When Wish Replaces Thought: Why So Much of What You Believe Is False* (Prometheus Books, Buffalo, N.Y. 1992), p. 128.



Martin Gardner, co-chairman of CSICOP's Center for Inquiry Capital Fund Campaign

"Crank science books far outsell most books by reputable scientists."

I wrote those words way back in 1981, in my Prometheus book *Science: Good, Bad and Bogus.* I think they are still true.

The book is a collection of essays, many of them culled from the pages of the SKEPTICAL INQUIRER. There I dealt with ESP, biorhythms, psychics, and dozens of other fringe-science phenomena.

That was then. This is now. Hardly anyone takes biorhythms, ancient astronauts, or the Bermuda Triangle seriously anymore. I expect that this is at least partly because the SKEPTICAL INQUIRER and its parent, CSICOP, have been doing their work.

Psychics? We have lots more to do there. But we need to work from a position of strength. That's where the Center for Inquiry comes in. The Center, in Amherst, N.Y. (a suburb of Buffalo, 60 miles from Rochester, 80 miles from Toronto, an hour by air from New York City, five hours from California), will be able to dedicate these features to the skeptical movement:

1. **The world's largest skeptics' library**
2. **Our own seminar, meeting, and conference rooms**
3. **Our own video and audio production center**

The new facility will provide 25,000 square feet of space, a tenth of a mile from the Amherst Campus of the State University of New York at Buffalo, the largest campus of the country's largest state university system.

Price: $3.9 million in donated capital. I am proud to be co-chairman of this effort with Steve Allen. We have both given to it. But we can't accomplish our goals without your participation, too.

Please use the postpaid response card in the centerfold of this issue, and let us know how you would like to help out.

Martin Gardner

Psychic Vibrations

Barbie's Essence, Creationist Tactics, and Hyperspatial Hoax

ROBERT SHEAFFER

We've all heard about people who channel the spirits of Cro-Magnon warriors and Indian princesses, but a recent New Age breakthrough apparently makes it possible to receive messages from entities that never had spirits in the first place. From San Anselmo, California, not far from San Francisco, the *Barbie Channeling Newsletter* celebrates this feat. "I channel Barbie, archetypical feminine plastic essence who embodies that stereotypical wisdom of the 60s and 70s," writes the editor, Barbara, who withholds her last name. "Since childhood I have been gifted with an intensely personal, growth-oriented relationship with Barbie, the polyethylene essence who is 700 million teaching essences. Her influence has transformed and guided many of my peers through pre-puberty to fully realized maturity. Her truths are too important to be prepackaged. My sincere hope is to let the voice of Barbie, my Inner name-twin, come through. Barbie's messages are offered in love." No word yet on whether anything has been heard from Barbie's plastic boyfriend, Ken.

* * *

Creationists everywhere will soon be flocking to the new Museum of Creation and Earth History, located on the top floor of the Headquarters Building of the Institute for Creation Research (ICR) near San Diego. This new 4,000-square-foot museum has a separate exhibit representing each day of Creation Week. Other exhibits center around "The Fall and the Curse." Visitors to the museum start off with a walking tour "through the newly created universe, then the Garden of Eden, followed by entrance into the regime of sin and death." Next they enter Noah's Ark, followed by

"the domain of pagan pantheistic evolutionism," from which as they exit their eyes catch sight of "the cross of the coming Savior in the distance." Given the ceaseless pronouncements that Creationism is based on scientific fact, not religious doctrine, presumably the visitor will be able to see for the first time the Creationists' scientific evidence substantiating the Fall, the Curse, and the Regime of Sin and Death.

In a related development, the status of ongoing research at ICR was updated in the April issue of *Acts and Facts.* The researches of Steven A. Austin, geologist, in the Grand Canyon and at Mount St. Helens have demonstrated how both "depositional systems (stratified sediments) and erosional systems (canyons) can be formed in a few days rather than requiring millions of years." Physicist Gerald Aardsma is investigating "the effects of different environmental factors on the longevity of fruit flies. This may eventually throw light on the greater longevity of humans and animals" in the antediluvian world, with its thermal-vapor canopy. Biologist Richard Lumsden is busily demonstrating via information theory that "the information required for genomic growth must have been implanted in the organism by creation at the beginning" and not by a process of evolution. Summarizing the ongoing effort, the reader is assured that "the ICR faculty members continually review the recent literature in their respective fields, in order to try to correlate any new scientific data with Scripture." What becomes of any scientific data that does *not* correlate with Scripture is not stated.

* * *

Starting in 1981, reporter Ron McRae was the source of a number of new stories about an alleged Pentagon "psychic task force" that was supposedly working to "perfect psychotechtronic weapons that will work through extrasensory perception." These stories were first published by the well-known syndicated columnist Jack Anderson, for whom McRae worked; McRae later made them into a book, *Mind Wars* (St. Martin's Press, 1984). McRae's accounts of bizarre experiments like the "First Earth Battalion" were frequently cited by believers in the paranormal to demonstrate the significance of paranormal investigation, and by skeptics to demonstrate the allegedly near-infinite credulity of those in government. But Ron McRae, writing in the June 1992 *Spy*, now admits that he made the whole thing up. "In December 1980, I made a bar bet with a friend," writes McRae. "He maintained that there were limits to what people would swallow. I didn't think so. We bet $10, and I waited for the right opportunity to test the limits." Soon McRae was feeding Anderson stories like the one about a "hyperspatial howitzer" that could supposedly "transmit a nuclear explosion in the Nevada desert to the gates of the Kremlin with the speed of thought." McRae writes: "These stories played on for years. *Discover* magazine asked me for more data; for them, I fabricated another weapon—SADDOR, the satellite-deployed dowsing rod. This was supposedly an ordinary Y-shaped stick that had been sent into space, through which psychics were able to hunt for enemy missiles and submarines." He notes that *Discover*, like Jack Anderson, "asked for but got not a scrap of evidence that this program actually existed." But not everyone was fooled. Reviewing *Mind Wars* in *SI* (Spring 1984, p. 271), Philip J. Klass disputed Anderson's statement that McRae

"has become one of the best investigators in the business." Klass said, "This may be true by Anderson's standards, but not by mine." Then James Randi noted other significant misrepresentations in *Mind Wars.*

In the end, there were limits to what McRae himself was willing to swallow. "In the course of researching the book, I was told by a White House aide that Ronald Reagan consulted a psychic to set his schedule. I never even considered publishing the story; I didn't believe it, but more to the point, I didn't think anyone else would, either." □

SPECIAL REPORT

3.7 Million Americans Kidnapped by Aliens?

Part 1: Critiquing the 'Unusual Personal Experiences' Survey

LLOYD STIRES

I recently received a 60-page booklet, *Unusual Personal Experiences: An Analysis of the Data from Three National Surveys*, by Budd Hopkins, an artist and the author of *Intruders;* David Jacobs, associate professor of history at Temple University; and Ron Westrum, professor of sociology at Eastern Michigan University. It reports the results of a privately funded nationwide survey conducted for the authors by the Roper Organization, the purpose of which was to estimate the number of Americans who have been abducted by aliens. The authors' introduction states that this report is being sent to mental-health professionals in the hope that it will lead to more humane treatment of people suffering from "UFO abduction syndrome." According to the authors, psychologists at present treat people who believe they have been kidnapped by aliens as if they were mentally ill. They suggest that therapists should believe abductees and treat them as they would people with post-traumatic stress disorder, such as combat veterans and victims of family violence. (In fact, they draw a questionable analogy between UFO abductees and victims of child abuse, who also were not always believed by mental-health professionals.)

Hopkins, Jacobs, and Westrum's interpretation of the responses to their five survey questions is a classic example of going far beyond the information given.

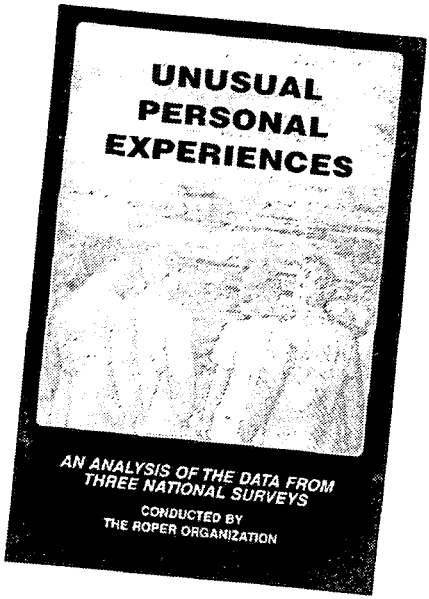
A random sample of 5,947 American adults participated in the survey. The sampling and data-collection methodology appears adequate, comparable to other national surveys. The difficulty lies with the questions and the assump-

tions underlying their interpretation. The authors claim that you can't ask people directly whether they have been abducted by aliens: first, because some of the victims have repressed the experience and, second, because some of those who remember their abductions have been ridiculed for talking about them and are reluctant to discuss them with strangers. Therefore, they tried to measure abduction indirectly, using five questions about specific events commonly reported by abductees. (Why should people who are repressing or concealing their abductions nonetheless respond to these five questions? Presumably, they are less threatening. If this assumption is false, then by the authors' logic the number of alien abductees will be underestimated.)

The five questions—all preceded by "How often has this occurrence happened to you?"—are as follows. (The percentages in brackets represent those who said this had happened to them at least once.)

> Waking up paralyzed with a sense of a strange person or presence or something else in the room. [18%]
>
> Experiencing a period of time of an hour or more in which you were apparently lost, but you could not remember why or where you had been. [13%]
>
> Feeling that you were actually flying through the air although you didn't know how or why. [10%]
>
> Seeing unusual lights or balls of light in a room without knowing what was causing them or where they came from. [8%]
>
> Finding puzzling scars on your body and neither you nor anyone else remembering how you received them or where you got them. [8%]

These questions were selected



from interviews with people who believe they have been abducted by aliens. Many of them report similar scenarios. They wake up immobilized in a room surrounded by alien creatures ("small, gray-skinned, hairless figures" with large eyes) and balls of light. They are levitated to a metallic spacecraft, where they are stripped and subjected to medical examinations (aliens take an unusual interest in the genitals of abductees) that sometimes leave scars. Afterward, they are unable to account for their lost time.

Respondents who reported having four out of these five experiences were considered probable abductees. However, the authors recognized that they might simply be measuring suggestibility, so they added another part to the question as a control:

> Hearing or seeing the word *trondant* and knowing that it has a secret meaning for you.

Only 1 percent said they recognized this nonexistent word, and these

people were discounted as probable abductees. After these false positives were eliminated 2 percent of the sample (119 people) met the criteria as probable abductees. Since the respondents were randomly sampled from the total population of 185 million American adults, the authors infer that 3.7 million Americans have probably been abducted by aliens.

No evidence is presented for the validity of these five questions. That is, we have no assurance that they measure what they are supposed to measure. The authors assume that alien abductees are likely to answer yes to four of the five questions, while nonabductees are not. Obviously, there is no group of *known* abductees to whom the questions have been posed. In fact, the authors made no attempt to validate the much weaker assumption that people *who believe they have been abducted by aliens* are more likely than other people to agree to these items. Therefore, the questions are useless for the stated purpose. (They could have asked respondents directly whether they believed they had been abducted by aliens *at the end of the survey*, where it would not have contaminated the responses to the other questions.)

How can we explain the high percentages of people who reported having these unusual experiences and the 2 percent who reported having four out of five of them? Several possibilities exist.

1. Maybe the percentages are not surprising, considering the number of people who hold paranormal beliefs (Gallup and Newport 1991). Note that it is theoretically possible to answer yes to all five questions without ever entertaining a UFO-abduction scenario.

2. The authors may still be measuring suggestibility. The control question may be ineffective since familiarity with the word *trondant* is not as interesting or appealing as the other, paranormal beliefs.

3. Respondents may have been confused about the meaning of some of the questions. For example, those responding yes to the item about flying through the air may have been reporting dreams about flying, which are fairly common. The authors claim that the word *actually* in the question precludes this interpretation and that the phrase "although you didn't know how or why" eliminates the reporting of airplane rides, falls, and so on. However, this assumes that subjects are very attentive to the questions and conscientious in their responses. There are similar problems with the other four items.

The authors seem impressed with the fact that so many victims of UFO-abduction syndrome report similar experiences. However, the existence of a standard alien-abduction scenario can be explained by their common exposure to books, films, and television dramas with this plot.

I wonder whether the motives of the authors and publishers of this report are completely altruistic. The booklet contains a reply card on which you can indicate your interest in future conferences and workshops on the subject.

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Part 2: Additional Comments About the 'Unusual Personal Experiences' Survey

PHILIP J. KLASS

Editor's Note: These remarks are excerpted by permission from Philip J. Klass's Skeptics UFO Newsletter *(#16, July 1992).*

The Roper survey was conducted to try to determine how many American adults may have experienced "UFO abductions." But the 11 questions asked were framed by Budd Hopkins and David Jacobs—the chief promoters of the claim that ETs are abducting Earthlings.

Only 18 out of the 5,947 persons surveyed (0.3%) reported *all five* of the "key indicator" experiences—which would mean that "only" 560,000 American adults had experienced UFO abduction. So Hopkins and Jacobs decided that if anyone answered yes to four out of the five experiences, this qualified him or her as a "probable abductee." When Hopkins and Jacobs used this relaxed criterion, the Roper survey showed that 2 percent of those surveyed qualified as "probable abductees," which corresponds to 3.7 million "probable abductees"—a much more impressive figure.

If their interpretation of the Roper data were correct, consider the implications. If one assumes that UFO abductions began in the fall of 1961 with Betty and Barney Hill, and since then ETs have abducted 3.7 million Americans, this means that an average of nearly 340 Americans have been abducted every day during the past 30 years. Because most UFO abductions (allegedly) occur at night, this means that (on average) every two minutes during every night of the past 30 years an American has been abducted. . . .

It is regrettable (but not surprising) that Hopkins and Jacobs did not include any survey questions asking how many books dealing with UFOs the subject had read or how many television shows dealing with UFOs and UFO-abductions had been seen to assess their possible influence. . . .

In discussing the results of the survey, Hopkins, Jacobs, and Ron Westrum (a sociology professor at Eastern Michigan University) gloss over the fact that 11 percent of those surveyed say they've seen ghosts and 14 percent (26 million persons) report "feeling as if you left your body."

The survey indicates that 11 percent of those surveyed (corresponding to more than 20 million persons) said that they had seen a ghost, and 3 percent (5.5 million persons) said they had seen a ghost more than twice. But only 7 percent (13 million persons) reported having had UFO sightings and 1 percent (1.9 million) reported more than two sightings.

This might seem to show that the U.S. is being visited by more ghosts than UFOs. But a 1990 telephone survey of 1,236 American adults, conducted by the Gallup organization ("Belief in Paranormal Phenomena Among Adult Americans," by George H. Gallup and Frank Newport, *SI*, Winter 1991), showed that 14 percent of those polled had seen a UFO, while only 9 percent reported seeing a ghost. Gallup's 14 percent UFO-sighting figure is twice Roper's 7 percent. . . .

Hopkins and Jacobs are surprised that the highest number of yes responses to the five "key indicator" questions was the 18 percent for the one which asked about "waking up paralyzed and sensing the presence of a strange figure." They acknowledge the occurrence of "hypnogogic hallucinations" by perfectly normal persons when falling asleep, or "hypnopompic hallucinations" when awakening, in which a person reports feeling paralyzed. But by adding the provisions of sensing "a strange person or presence or something else in the room," Hopkins and Jacobs claim this excludes a possible hypnopompic/hypnogogic explanation.

If Hopkins or Jacobs had read the Summer 1988 SKEPTICAL INQUIRER, they would know that their claim is false. The Winter 1987-88 *SI* carried an article on hypnopompic/hypnogogic hallucinations, authored by Robert A. Baker, a seasoned professor of psychology at the University of Kentucky. Baker's article prompted a number of readers to write, describing their own hypnopompic/hypnogogic experiences, some of which were published in the Letters section of the Summer 1988 issue of *SI*. . . .

Experiments conducted by psychologists Sheryl C. Wilson and T. X. Barber indicate that an estimated 4 percent of adult Americans are "fantasy-prone individuals." Such persons "fantasize a large part of the time" and "typically 'see' . . . and fully experience what they fantasize," according to Wilson and Barber. Results of the Roper survey suggest their 4 percent figure may be low. . . .

Many psychotherapists will be impressed by the fact that the introduction to the Roper survey report was written by John E. Mack, 62, professor of psychiatry at Harvard Medical School and former head of its Psychiatric Department. In Mack's introduction, he did not mention that he recently signed a $200,000 contract with Scribner's to write a book on UFO abductions. . . .

Funds to conduct the Roper survey, publish the 64-page report on the results, and mail it to nearly 100,000 psychiatrists, psychologists, and other mental-health professionals shortly before the CBS-TV miniseries "Intruders" dealing with UFO abductions was broadcast May 17-19, were supplied by Robert Bigelow, a wealthy Las Vegas businessman, and an "anonymous donor" (whose name is Hans-Adam von Lichtenstein, from the country whose name he bears).

We suggest that Bigelow and von Lichtenstein fund a similar survey in a country in which UFOs and UFO abductions have *not* received such wide promotion on television—for example, Bulgaria. We predict that a far smaller percentage of Bulgarians will qualify as "probable abductees."

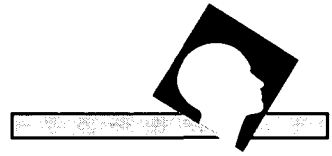
Veteran aviation journalist Philip J. Klass is a longtime investigator of UFO claims. He is author of UFO-Abductions: A Dangerous Game *(Prometheus Books), among other books, and is editor of the* Skeptics UFO Newsletter *(404 N Street SW, Washington, DC 20024).*

Note: As we were going to proof, a very detailed, 30-page critical paper stimulated by the "Unusual Personal Experiences" survey and other reports that allege the reality of alien abductions has come to our attention. Prepared by Robert A. Baker, professor emeritus of psychology, University of Kentucky, this unpublished paper is entitled, "Alien Abductions or Alien Productions? Some Not So Unusual Experiences." Write to Baker at 3495 Castleton Way North, Lexington, KY 40517, for information—EDITOR

Psychics: Do Police Departments Really Use Them?

JANE AYERS SWEAT and MARK W. DURM

ABSTRACT: The popular media give the impression that police departments in the United States use "psychics" for assistance in solving difficult cases. But do they? The present study was undertaken to answer that very question. A survey was administered to the police departments of the 50 largest cities in America. The results revealed that 65 percent of these cities do not use and have never used psychics. In addition, it could be argued from the results that psychics actually hinder effective investigations.



The police departments of the 50 largest U.S. cities were surveyed about their use of 'psychics.' Nearly two-thirds have never used psychics. None said psychics provided information more useful than that from other sources. Some comments were quite negative.

"Clairvoyant Crime Busters," "Cops Amazed by Crime-busting Psychic," "Can Psychics See What Detectives Can't?" These are titles of just a few of the articles published in recent years proclaiming the ability of self-described "psychics" to help police. But do so-called psychics really help? To what extent are they even used? To answer these questions the authors of this study undertook an investigation of the police departments in the 50 largest cities in the United States.

People in America are frequently exposed to the belief that "psychics" aid police investigations. The mass media promote this view. An example of a magazine doing so would be the *McCall's* article "Clairvoyant Crime Busters." (Wolkomir and Wolkomir 1987). The article gives details about individual psychics and their supposed crime-solving abilities. Psychics Dorothy Allison and John Catchings are men-

tioned often. Even the possibility of an "ESP gene" is discussed because John Catchings and his mother are allegedly both psychic! The article also states that, although the psychic gives information to the police, it is the policeman's job to ascertain what the information means.

An earlier *McCall's* exclusive, "Can Psychics See What Detectives Can't?" (Ralston 1983), says that "many" psychics help investigate various crimes and that some police departments see this psychic assistance as a "legitimate investigative tool." This article also acclaims Dorothy Allison and says that she has to know only when and at what time the crime was committed in order to solve the crime, and that she can do it even by phone!


True Story

CAN Psychics SOLVE CRIMES?

Yes, say these two women who are hired to do it every day—with uncanny success BY LORI DUNCAN

This article from *Woman's Day* (April 1, 1992) is an example of many that appear regularly and report uncritically on claims about police use of psychics.

A *Weekly World News* article, "Cops Amazed by Crime-Busting Psychic" (Alexander 1988), focused on diviner Carol Pate. This article contends that she has helped solve at least 65 murders and a hundred other crimes around the country.

West, the *San Jose Mercury News* Sunday magazine, ran a piece titled "Sylvia Sells Sooth by the Seer" (Holub 1988) about San Jose psychic Sylvia Brown and how she had helped find 20 missing children but never charged a fee. The article says she helped police but preferred to remain anonymous.

Such articles continue. A 1992 article in *Woman's Day* (Duncan 1992) asks in its title "Can Psychics Solve Crimes?" It answers affirmatively, and uncritically: "Yes, say these two women [Noreen Renier and Nancy Czetli] who are hired to do it every day—with uncanny success."

There are also many books that proclaim psychic power. A recent example of this genre is Arthur Lyons and Marcello Truzzi's (1991) *The Blue Sense: Psychic Detectives and Crime* (reviewed in *SI*, Fall 1991). The uniqueness of this book is that the authors give the impression of objectivity in their investigation of psychic detection. This veil of objectivity is thin, however, and the reader soon realizes that Lyons and Truzzi are subtle proponents of "the blue sense"—that intuitive sense that cops and psychics have that goes beyond what they can hear, see, or smell. Another book proposing psychic power is Colin Wilson's *The Psychic Detectives* (1987). In it he discusses people like Peter Hurkos, Nelson Palmer, Gerard Croiset, and Edgar Cayce. First, Wilson contends that phenomena must be real if they are reported again and again. Second, he says that skeptics doubt because of "everyday consciousness." Wilson also claims that there is "abundant evi-

dence" to prove that psychic powers will "operate on demand" (p. 251). He says that dozens of psychics have proved their powers under rigorous laboratory settings and that those who refuse to accept this evidence are not just unconvinced by the demonstration, but find "the whole idea deeply disturbing and disagreeable." Why does Wilson believe all this? He says that clairvoyants get information from "probably the right brain." This information is then picked up by the left brain. Where, then, does the right brain get its information? Wilson says it comes from either the subjective mind, the subliminal self, or the unconscious. These, he believes, come from "some sort of record that already exists in nature" (p. 252).

Not all articles and books extol psychics' abilities to aid police. Several are very poignant in their disclaimers. *Newsweek* (Morganthau and Smith 1980) described Dorothy Allison's trip to Atlanta in 1980 to help in the case that later became known as the "Atlanta Child Murders Case." The city of Atlanta had invited Allison to participate. *Newsweek* reported, "Her much publicized snooping broke no new ground and the mother of one missing boy complained that the seer never returned her only photograph of her son."

Henry Gordon, in his book *Extra-Sensory Deception* (1987), also discussed Allison's visit to Atlanta. Gordon reported that an Atlanta police official said she gave police 42 names of the possible killer, but that they were all wrong. Gordon remarked, "She rode around in a big limousine . . . for three days, then went home" (pp. 142-143).

In the same book Gordon quotes Harold Graham, Ontario Provincial Police Commissioner (41 years with the Ontario Police) as saying, "A psychic never to my knowledge has solved a case" (p. 141). Gordon remarks that psychic detectives "operate on a fixed formula." The formula usually involves their providing such generalities as several different locations and unconnected details, and when a case is finally solved, the psychic can probably then find one or two of his or her guesses that seem to fit the facts of the case.

Another book that tells of psychic assistance in police investigations is *The Dungeon Master: The Disappearance of James Dallas Egbert III*, by William Dear (1984). Dear, a private investigator, wrote about how he solved the Egbert case. He says hundreds of psychics called him about the case during his investigation. He writes: "I always talk to psychics, though. They generally seem sincere to me, though none has ever helped me on a case" (p. 49).

In the book *Careless Whispers: The Lake Waco Murders*, Carlton Stowers describes how psychic John Catchings took part in the case. Stowers writes: "All in all, however, Catchings's visit was a disappointment. He provided nothing specific, only a few impressions which he admitted reservations about" (p. 195).

Martin Reiser, director of the Behavioral Sciences Services Section of the Los Angeles Police Department, has done two major studies on the value of psychics' information to police investigations. The first study, in 1979, was titled "An Evaluation of the Use of Psychics in the Investigation of Major Crimes." Twelve psychics participated in the double-blind experiment. Two solved crimes and two unsolved crimes were selected by an investigator not involved in the research. The results: little, if any, information was gained from the psychics that would help in the investigation of the crimes.

In 1980, Reiser conducted the second study, called "A Comparison

of Psychics, Detectives, and Students in the Investigation of Major Crimes." Once again, a double-blind was used. The sample included 12 psychics, 11 college students, and 12 homicide detectives. Four cases, two solved and two unsolved, were chosen by a detective supervisor not directly involved in the research. The psychic group produced about ten times as much information as either one of the other groups. Even with this advantage, the psychics did *not* produce any *better* information than the other two groups. The psychics did not produce any information relating to the cases beyond a chance level of expectancy. Reiser suggested that if an investigator wants to use a psychic, it would be best to set up some verification procedure where an objective observer could record all events.

Ward Lucas, in his investigative article "Police Use of Psychics: A Waste of Resources and Tax Money," published in the *Campus Law Enforcement Journal* (1985), described an experiment similar to the research conducted by Martin Reiser. In 1984 an investigative team at KUSA-TV in Denver took well-known psychics and presented them with six solved and unsolved cases from local police departments. Original evidence was also used. Each psychic was allowed to establish what he or she considered to be fair conditions. Later, the same cases were given to students and they made guesses. Each group scored according to chance. Says Lucas: "We may as well have opened fortune cookies to derive solutions to our criminal cases" (p. 16).

Results indicate that opinion is divided on how useful psychics are to the police. There are those who argue they help and others who argue they hinder. But who better to ask than the police departments themselves.

Thus, we undertook the present study.

Present Study

Based upon the 1980 U.S. Census records, the police departments from the 50 largest U.S. cities were surveyed. (See Table 1). A questionnaire was sent to the chief of police in each city. Either the chief or his designee could respond. Those personnel who did respond included 8 deputy chiefs, 5 homicide unit commanders, 5 lieutenants, 4 chiefs of detectives, 4 detectives, 3 inspectors, 2 captains, 2 sergeants, and 1 deputy police administrator, among others. All 50 cities replied, although Philadelphia and Washington, D.C., declined to answer.

A five-item questionnaire was used, and either yes or no answers were to be circled by the respondent. Room was also provided for any comments the respondent wished to make. (See Figure 1.) Room was also provided for any comments the respondent wished to make. It should be stated that there could possibly be an "underrater bias" among respondents since identification with psychics among police could have negative connotations. It is believed by the authors, however, that in this particular study this effect was minimal, if it occurred at all. This belief was due to the conviction with which the comments were made. In the following analysis, the questions and responses were analyzed individually.

Question 1: In the past has your Police Department used psychics or does the department presently use them in solving investigations?

Of the 48 respondents, 31 answered no, and 17 answered yes. As stated before, Philadelphia and Washington, D.C., declined to answer. Therefore, approximately 65 percent do not use and have never used psychics.

Below are some comments on Question 1 from the respondents, arranged alphabetically by city:

Chicago: Edward S. Wodnicki, Chief of Detectives, said that he, but not the department, had used a psychic on two occasions. "This was on my own volition and does not reflect policy of the Chicago Police Department."

Cleveland: David P. McNea, Deputy Chief, said his department "does not solicit the aid of psychics in solving investigations."

Detroit: James E. Kleiner, Inspector, Commanding Officer, Goals and Standards Section, said his department "has not and does not solicit psychics."

Los Angeles: W. O. Gartland, Commanding Officer, Robbery-Homicide Division, said: "The Los Angeles Police Department does not use psychics as an investigative tool, although we are often contacted by them."

Nashville: Myra W. Thompson, Sergeant, Planning and Research, said its department has used a psychic "once only."

San Francisco: Larry Gurnett, Deputy Chief of Investigation, said: "Psychics have volunteered information or the victims' families seek that service and the information received is then given to us to evaluate for follow-up investigation."

Seattle: Roy Calvin Skagen, Asst. Chief: " 'Used' is a misleading word, perhaps. We have 'listened' to psychics when they contact us . . . usually at the request of a family member of a missing homicide victim. We do it as a courtesy and to show openness to explore any possibility when regular leads run dry. Success rate when we listen and look at a location indicated is *zero.*"

QUESTIONNAIRE

Please Circle

yes no 1. In the past has your Police Department used psychics or does the department presently use them in solving investigations? If yes, please answer questions 2 through 5.

2. If so, in which of the following categories?

Homicide _____
Missing Persons _____
Kidnapping _____
Locating Stolen Property _____
Other _____

Specify_____

yes no 3. Does your Police Department presently handle information received from a psychic any different than information from an ordinary source?

yes no 4. a. If your department has used psychics, was the information received more helpful in solving the case than other information received?

b. What kind of information was it and how was it used?

_____

_____

yes no 5. Do you personally consider information from a psychic more valuable than information received from a regular source?

Respondent's Position (Voluntary)_____

FIGURE 1.

Question 2: If so, in which of the following categories?

Homicide _____
Missing Persons _____
Kidnapping _____
Sexual Assault _____
Burglary _____
Locating Stolen Property _____
Other _____
Specify _____

Psychics had been used in 17 of the departments. They were used in 15 homicides, 10 missing-persons cases, 1 kidnapping, one burglary, and 1 assault case.

Question 3: Does your Police Department presently handle information received from a psychic any different than information from an ordinary source.

Of the 40 cities responding to this question, 33 answered no and 7 answered yes.

Question 4: (a) If your department has used psychics, was the information received more helpful in solving the case than other information received?

(b) What kind of information was it and how was it used?

Of the 26 who answered this question, all answered no.

TABLE 1

Responses of Police Departments of the 50 Largest Cities in America

(Y = Yes, N = No, C = Comment, K = Kidnapping, B = Burglary, SA = Sexual Assault, H = Homicide, MP = Missing Person.)

City	Question 1	Question 2	Question 3	Question 4a	Question 4b	Question 5
*Albuquerque	Y	H, MP	N	N	C	N, C
*Atlanta	Y	H	N	N	C	N
*Austin	N, C	-	Y	N	C	N, C
*Baltimore	N	-	-	-	-	-
Birmingham	N	-	-	-	-	-
*Boston	Y	H	N	N	C	C
Buffalo	N	-	N	-	-	N
Charlotte	Y	-	N	-	-	N
*Chicago	Y, C	H, B	N	N	C	N, C
Cincinnati	N	-	N	N	-	N
*Cleveland	N, C	-	-	-	-	C
Columbus	N	-	N	-	-	N
Dallas	N	-	N	-	-	N
Denver	N	-	N	-	-	N
*Detroit	N, C	-	-	-	-	-
El Paso	Y	H	Y	N	C	C
*Fort Worth	N	-	N	-	-	N, C
Honolulu	Y, C	H, MP	N	N	C	N
Houston	N	-	N	N	-	N
Indianapolis	N	-	N	N	-	N
Jacksonville	N	-	N	-	-	N
Kansas City	N	-	N	-	-	N
Long Beach	N	-	N	N	-	N
*Los Angeles	N, C	-	-	-	-	C
Louisville	N	-	N	-	-	N

*Respondent gave persmission to be quoted.

Below are the comments (4b), again arranged alphabetically by city:

Albuquerque: Richard Hughes, Lieutenant, said the information received concerned "attempts to locate bodies." He added, "We have had no real success with one."

Atlanta: W. J. Taylor, Deputy Chief Field Operations Division, said: "The Atlanta Bureau of Police Services does not as a general policy utilize psychics during criminal investigations." He added that, in 1980, psychic Dorothy Allison was called upon as police investigated the murders and disappearances of 30 black males in Atlanta. He said that Allison stayed in Atlanta for three days "visiting

TABLE 1, continued

Responses of Police Departments of the 50 Largest Cities in America

(Y = Yes, N = No, C = Comment, K = Kidnapping, B = Burglary, SA = Sexual Assault, H = Homicide, MP = Missing Person.)

City	Question 1	Question 2	Question 3	Question 4a	Question 4b	Question 5
*Memphis	N	-	N	N	C	N
*Miami	N	-	N	N	-	N
Milwaukee	N	-	-	-	-	-
Minneapolis	N	-	N	-	-	N
*Nashville	Y, C	MP	N	N	C	N
New Orleans	N	-	N	-	-	N
New York City	Y	H, MP	N	N	-	N
Newark	Y	MP	N	N	C	N
Oakland	N	-	N	-	-	N
Oklahoma City	N, C	-	N	N	-	N
*Omaha	Y, C	H, MP	N	N	C	N
Philadelphia	(Declined to answer.)					
Phoenix	N	-	Y	-	-	N
Pittsburgh	N	-	N	N	-	N
*Portland, Ore.	Y	H, MP	Y	N	C	N, C
*Saint Louis	Y	H	N	N	-	N
San Antonio	N	-	-	-	-	N
San Diego	Y	H	Y	N	C	N
*San Francisco	Y, C	H, MP, SA	N	N	C	N
San Jose	N, C	H, MP	N	N	C	N
*Seattle	Y, C	H	Y	N	C	N
Toledo	N	-	N	-	-	N
Tucson	Y	H, MP, K	Y	N	C	N, C
Tulsa	N	-	-	-	-	N
Washington, D.C.	(Declined to answer.)					

*Respondent gave permission to be quoted.

crime scenes, after which she provided investigators bits and pieces of information that proved to be of no value to the investigation." Said Taylor: "Personally, I think our invitation to her was a mistake. Her visit was highly publicized by both the local and national media. As a result we received thousands of psychic readings from across the country. This flood of letters placed a tremendous burden on my investigators because each letter had to be read and analyzed. In the final analysis none of the information provided a linkage to the killer."

Austin: Mike Belvin: "Information received has been voluntary, unreliable, and useless to our investigation."

Boston: Patrick J. Brady, Detective, said: "Peter Hurkos, a psychic from Holland, was used in the Boston Strangler case."

Chicago: Edward S. Wodnicki, Chief of Detectives, said he personally has used a psychic twice. "In both instances the information was general. In regard to the burglary, the psychic was accurate regarding the location of a vehicle that was stolen in the course of the burglary. In the homicide, we feel that the body was transported for a period of time, before it was dumped. The psychic seems to be able to 'sight' a portion of the route traveled by the offender."

Memphis: Ken East, Captain, Homicide Division, said: "We have received general information, and used it as any other information in an investigation."

Nashville: Myra W. Thompson, Sergeant, Planning and Research: "The case was that of a missing child (girl) and the psychic advised the police department that the child had been murdered and also the method; however, could not provide location of the body. Body was eventually discovered."

Omaha: Larry L. Roberts, Homicide Unit Commander, said: "The information, in cases where psychics have contacted us, is usually not confirmed until after the fact."

Portland: Rob H. Aichele, Deputy Chief, said: "Psychics have offered conflicting reports, thus, self-negating each other.

San Diego, James R. Jarvis, Commanding Officer, Homicide Division, said he received "highly speculative information on a possible homicide suspect which proved to be untrue."

San Francisco: Larry R. Gurnett, Deputy Chief of Investigations, said his department has received "suspect descriptions" as well as "victim location."

Seattle: Roy Calvin Skagen, Assistant Chief, said information received has concerned "location of bodies."

Question 5: Do you personally consider information from a psychic more valuable than information received from a regular source?

Of the respondents, 39 said no. *None said yes.* One said it depends on which psychic was used. One said "sometimes." Seven did not answer. Two (Philadelphia and Washington, D.C.) declined to answer.

Several respondents made comments concerning this question:

Austin: Mike Belvin: "I have yet to see any information received from psychics of any value, based on 20 years experience. The information is usually distorted, of no investigative value, and inaccurate. They hamper an investigation and often cause distractions from the main investigation."

Boston: Patrick J. Brady, Detective: "All information received from any source is investigated for its validity."

Cleveland: David P. McNea, Deputy Chief: "Any information offered or brought forth by any so-called psychic would be handled no different than information obtained from ordinary sources."

Fort Worth: Thomas C. Swan, Homicide Lieutenant: "I have been Homicide Lieutenant for 7 years and know of no time that a psychic has been of any value other than offering false hope to

TABLE 2
Summary of Data

	No. of Cities Responding	"No"	"Yes"
Question 1: "Has your department used or is now presently using psychics?"	48	31 (65%)	17 (35%)

Question 2 (asked of the 17 answering yes to Question 1): "If so, which categories?"

Homicide	15
Missing Persons	10
Kidnapping	1
Sexual Assault	1
Burglary	1

Question 3: "Is information from psychics handled differently?"	40	33 (83%)	7 (17.5%)
Question 4 (a): "Was the psychic information more helpful?"	26	26 (100%)	0 (0%)
Question 5: "Is psychic information more valuable?"	41	39 (95%)*	0 (0%)

*One respondent (2.5%) answered, "Sometimes"; and one (2.5%) said, "Depends on which psychic."

survivors. They surface on sensational cases only. Most fit a mold. They tell you they are 85-percent accurate and are very defensive when you ask them for specifics. It doesn't take long for them to reach the victims' relatives and generate false hope. I would never, no matter what the cost, rely upon a psychic other than to process info the same as we do for everyone else. Where are these psychics when a wino is found murdered in an alley?"

Los Angeles: W. O. Gartland, Commanding Officer, Robbery-Homicide Division: "We have never been able to scientifically validate psychic phenomena, nor have we solved a case as the result of information provided by a purported psychic. This department conducted a study a number of years ago and participated in a series of experiments with parapsychologists involved in a program at the University of California at Los Angeles, which resulted in our stance on psychics."

Omaha: Larry L. Roberts, Homicide Unit Commander: "Psychics often provide us with plausible theories to explore. We have not yet identified a suspect or made an arrest solely on the basis of psychic information. It is simply another investigative tool."

Portland: Rob H. Aichele, Deputy Chief: "Psychic information has been volunteered many times,

but has *never* been beneficial to a case."

Conclusion

As the results above indicate, there is *not* a prevalent use of psychics among the police departments of our largest cities. Table 2 presents a summary of the data with abbreviated questions. One could argue that the psychics pander to and patronize the police but in the end prove to be parasitic. In some instances, as shown by the comments above, they may even hinder effective investigations.

Why then do titles like "Clairvoyant Crime Busters," "Cops Amazed by Crime-busting Psychic," and "Can Psychics See What Detectives Can't?" prevail? The mass media tend to give their audiences what they want. People want to believe there is some mysterious cosmic knowledge into which psychics tap. But, as this investigation reveals, the overwhelming majority of those police who actually do the investigations prefer to work with known tools rather than with unknown ones.

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Science Is the Most Human of Pursuits

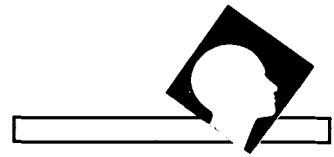
Science is driven forward by unexpected and surprising results emerging from new experiments or by the appearance of contradictions between theories previously thought compatible. Solving such problems as they arise is of the essence of our work. Thus science is not something strange and odd but the most human of pursuits.

—Sir Hermann Bondi, "The Philosopher of Science" (a tribute to Karl Popper), *Nature*, 358:363, July 30, 1992

Psychic Detectives: A Critical Examination

WALTER F. ROWE

A casual reader of American newspapers and supermarket tabloids would draw the conclusion that American law-enforcement agencies routinely consult "psychics." Such a reader might be excused for wondering how criminals can hope to escape detection in the face of so much paranormal firepower. Digging a little deeper, our reader would even find learned treatises advocating the police use of psychics and recounting the amazing successes of these "psychic detectives." So the case for psychic detectives is conclusively proved? I don't think so.



A check into the assertions of some police 'psychics' finds serious problems with their stories and alternative explanations for their claims.

Psychics Versus the Record

In 1989, I collaborated with two graduate students in the Department of Forensic Sciences at George Washington University on a critical examination of the purported achievements of so-called psychic detectives. My colleagues were both members of the U.S. Army Military Police Corps. Captain Eric L. Provost is now executive officer of the U.S. Army Criminal Investigation Laboratory in Camp Zama, Japan. Chief Warrant Officer Jeanette Clark is a U.S. Army Criminal Investigation Division (CID) investigator with many years experience in criminal investigations. We decided to concentrate on psychics who had been recently active in the United States; my colleagues would contact police officials who had supposedly worked with the psychic detectives and solicit their candid appraisal of the contributions the psychics made to their investigations. The psychic detectives chosen for evaluation were selected mainly from the works of Charles R. Farabee (1981) and

Whitney S. Hibbard and Raymond W. Worring (1982), along with others whose abilities have been touted in newspapers and popular magazines. In some cases, we were also able to interview the psychic detectives themselves and obtain samples of their press clippings.

Many of the false claims regarding the psychic abilities of Peter Hurkos have been exposed by Piet Hein Hoebens (1985). Hurkos provided American police with information in major cases, such as the Boston Strangler case (which Norma Lee Browning's *The Psychic World of Peter Hurkos* credits Hurkos with solving) and the Sharon Tate murders. In fact, Hurkos did not solve the Boston Strangler case, and the information he provided in the Sharon Tate murders was not merely useless but also hopelessly incorrect. According to Ed Sanders in his book *The Family:*

> Mr. Hurkos crouched down in the bloodstained living room, picking up the vibes. . . . After his void-scan Mr. Hurkos announced that "three men killed Sharon Tate and her four friends and I know who they are. I have identified the killers to the police and told them that these three men must be stopped soon. Otherwise, they will kill again."

The facts are that only three of the victims could reasonably have been called friends of Sharon Tate. The remaining victim was visiting the caretaker and was killed because he happened on the crime in progress. More important, the killers were two women and one man (a third woman acted as lookout). The killers were already in police custody (although not for the Tate murders). Nor was the Sharon Tate murder case Hurkos's only abject failure. According to Detective John Schaeffer of the Chicago Police, whom we had contacted about another psychic detective, Hurkos became unwelcome among the wealthy Chicagoans on whom he "sponged" after he failed to solve a $60,000 burglary committed against his hosts.

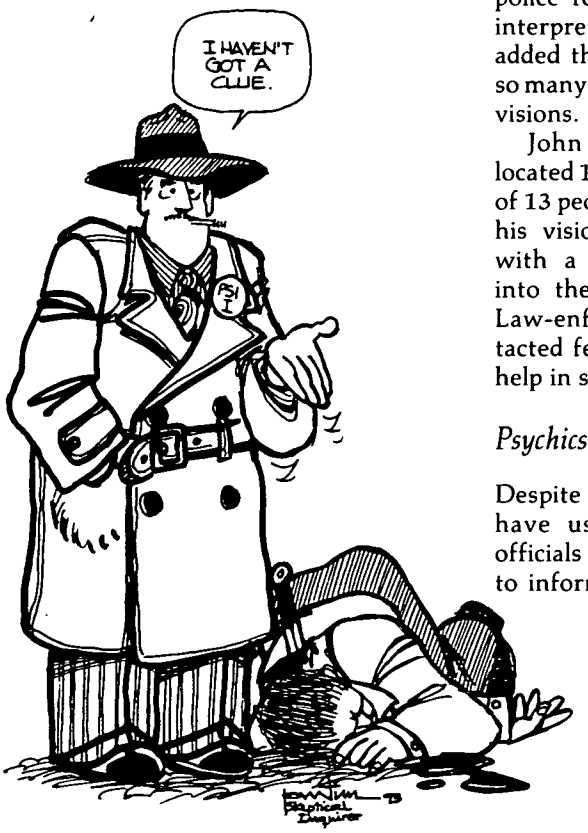
Piet Hein Hoebens has also discredited many of the cases allegedly solved by Gerald Croiset in Holland and elsewhere in Europe. We were able to examine one of Croiset's rare American cases. Hibbard and Worring (1982) claim that Croiset successfully located the missing daughter of the chairman of the Political Science Department at the University of Kansas. We contacted Paul Schumaker, the present department chairman, and Earl Nehring, Schumaker's predecessor. Nehring became chairman in 1972 and had worked in the department for many years prior to that time. Neither Schumaker nor Nehring had heard of any such missing-child case.

Marinus Dykshorn is another Dutch psychic detective. He is credited by Hibbard and Worring with having aided North Carolina State Police in four murder cases. Unfortunately, there is no such organization as the North Carolina State Police. Detective Bill Doubty of the North Carolina *State Bureau of Investigation* (who has been with the bureau for 20 years) has never heard of a psychic named Dykshorn; furthermore, to the best of his knowledge the bureau has never requested the aid of a psychic.

Irene F. Hughes and Beverly C. Jaegers are two other psychic detectives mentioned by Hibbard and Worring. Detective John Schaeffer of the Chicago Police informed us that Hughes was infamous for providing unsolicited information about unsolved crimes and that law-enforcement officers in the Chicago area regarded her information as being without value. Beverly Jaegers

has supposedly organized psychic detectives to work on cases throughout the United States. Although Hibbard and Worring give her place of residence as Creve Coeur, Missouri, the Creve Coeur Police Department had never heard of Jaegers and the local telephone directory has no listing for either "Beverly Jaegers" or "B. Jaegers." John Catchings, whose work as a psychic detective I discuss below, informed us that he had once met Jaegers, but had not heard from her in 12 or 15 years. Moreover, she had never approached him to join any organization.

Dorothy Allison is a New Jersey psychic who provided police with information in the Atlanta child-murders. More recently, she was apparently contacted by the Fairfax County Police in the Melissa Brannen abduction. Whether she provided any information to Fairfax police in this instance is not known at this time; however, despite the conviction of Caleb Hughes for Melissa's abduction, Melissa Brannen remains missing. As to Allison's claim to have aided in solving the Atlanta child-murders case, she provided police with 42 different names, none of which was Wayne or Williams. Wayne Williams was apprehended purely as the result of police surveillance of the bridges over the Chattahoochee River, where Williams was disposing of his victims. We did not contact Allison directly; however, Jeanette Clark interviewed Detective Salvatore Lubertazzi, the Nutley, New Jersey, police officer who has worked as Allison's liaison with police for 15 years. He helps police interpret Allison's visions. Lubertazzi added that because Allison works on so many cases she sometimes confuses visions.



John Catchings claims to have located 12 bodies and caused the arrest of 13 people. He claims, however, that his visions are used in conjunction with a commonsense investigation into the circumstances of the case. Law-enforcement officers we contacted felt he had been of significant help in solving cases.

Psychics in the Dock

Despite what tabloid writers might have us believe, law-enforcement officials do not always react positively to information provided by psychics. The cases of Brett Cadorette and Steven Paul Linscott illustrate rather hardheaded responses to information volunteered to police by would-be psychics.

Brett Cadorette volunteered to police that he had

had psychic visions of the throat slashing and sexual abuse of a Staten Island, New York, woman. He described the victim clutching a clump of hair in her hand (a fact not made public by police spokespersons). Police made Cadorette the prime suspect of their investigations, and he was ultimately convicted of attempted murder.

Steven Linscott, of Oak Park, Illinois, volunteered to police details of a dream he claimed to have had about the death of Karen Anne Phillips, who had been sexually assaulted, beaten, and strangled to death. Police in the course of their investigations routinely questioned Linscott (who lived with his wife in Phillips's apartment house complex). Linscott related to police a dream he had purportedly had on the night of the murder. According to Linscott's dream, the victim had been beaten in a downward fashion, and the victim and the assailant had been spattered with blood. He described the murder scene as the living room (correct) of a two-bedroom apartment (incorrect); he saw a couch in the living room (incorrect). He described the victim as black (incorrect). Linscott was arrested and prosecuted for Phillips's murder. Scientific tests found Linscott's hair to be consistent with that left by the murderer. Serological tests showed that the assailant was either an O secretor (like the victim) or a nonsecretor; Linscott proved to be an AB nonsecretor.

Linscott was convicted; however, his conviction was overturned on the grounds of the prosecutor's prejudicial misrepresentations of the scientific evidence. The Linscott case was resolved on July 27, 1992, when all charges against him were dismissed. DNA profiling of semen found in the victim precluded Linscott's being the perpetrator.

Investigation of a D.C. Psychic

The March 15, 1991, *Washington Times* reported that local psychic Ann Gehman had helped an Alexandria, Virginia, family find the body of Festus Harris, who had disappeared while on a visit to friends about a week earlier. The story quoted a family member who said Gehman had had a vision of "a bridge, a garage . . . with lots of traffic." Harris's body was found in a small wooded area in the 1900 block of N. Van Dorn Street near the Ramada Inn. The article further stated:

> Mrs. Gehman is a nationally known psychic who has aided police in a number of high-profile murder cases, including one that led to the conviction of notorious serial killer Ted Bundy in Florida.

I contacted the article's author, Michael Cromwell, at the *Washington Times*'s Alexandria bureau. He told me that he was somewhat skeptical of the claims made for Gehman; the background information used in the article was provided by her, and he had made no effort to verify it.

I subsequently interviewed Gehman over the telephone regarding this case. She told me that she had been contacted by Harris's niece and her husband or brother (she did not remember which). At that point Harris had been missing approximately one week, the family had combed the neighborhood without success, and the police had not been able to help. The niece had been referred to Gehman by a co-worker.

When queried about the information she had when consulted by Harris's niece, Gehman stated that she knew that the niece lived in Alexandria; the niece also brought (per Gehman's request) two photographs

of her uncle and an article of clothing, a sweatshirt. Gehman stated that she had a feeling of Harris wandering. In her vision she saw a high-rise building and had a sense that Harris had been on the sixth floor. She next saw Harris with a person in uniform and at a telephone booth. She had a sense of a parking lot or garage. Finally, she could see Harris near a bridge and could hear traffic in the background.

Gehman claimed that all of the information in her vision had been confirmed. She further observed that often her visions don't provide her with any information at all.

Gehman said she came from an Amish background and had grown up in Michigan. Formerly, she lived near Orlando, Florida. While living in Florida she had (she claimed) worked on the Ted Bundy case, specifically on the disappearance of Bundy's last victim, Kimberly Leach. Gehman said she had told investigators where to find the victim's body. She said she had described Bundy's appearance and that of his car and had informed investigators that Bundy was using stolen credit cards. One of the investigators she worked with in this case, she asserted, was an FBI agent. Gehman seemed reluctant to discuss other cases, claiming that this information was filed away and not readily accessible. She also could not provide me with newspaper clippings describing her involvement in other cases. I pointed out that other psychic detectives (such as Ginette Matacia) had such "press kits." She laughed and said that she was skeptical of many of the claims of the better-known psychic detectives. She feels that many exaggerate their abilities. At the conclusion of our interview, Gehman said she would contact Harris's niece and see if she would talk with me. (The niece was not named in the article, and Gehman declined to provide me with her telephone number.) Harris's niece has still not contacted me.

The numerous hits in Gehman's vision became less impressive when I visited the site where Harris's body was found. This part of Alexandria has numerous high-rise apartments and parking lots. In fact, on the east side of I-395 high-rises and parking lots alternate for several miles. There are also numerous bridges, some spanning I-395 and others carrying I-395 over streets or streams. As might be expected, I-395 and the neighboring streets carry heavy volumes of traffic. Given the environment in which Harris disappeared, the only features of the vision that turn out to be remarkable are the reference to the sixth floor of the high-rise, the attempted telephone call, and the person in uniform. As I have not been able to interview Harris's niece I have not been able to confirm that these were indeed hits. Given that one of the niece's co-workers is acquainted with Gehman, nonparanormal explanations for these hits come to mind.

Significantly, in her vision Gehman did not see the large red Ramada Inn sign within a few feet of the site where Harris's body was found.

It is possible to evaluate at least some of Gehman's other claims. As for her claim to have worked with an FBI agent in the Ted Bundy case, the FBI does not solicit information from psychics and classifies psychics as unreliable sources. While it may be true that in the Ted Bundy case she provided police with information, her information certainly did not aid in either the apprehension of Bundy or the recovery of the body of Kimberly Leach. Gehman is not mentioned in either Ann Rule's *The Stranger Beside Me* or Stephen Michaud and Hugh Aynsworth's *The Only Living Witness*, two detailed accounts of Ted Bundy's criminal career. Bundy was appre-

hended when a police officer spotted the car he was driving coming out of a restaurant parking lot late one evening. Curious to identify the driver of the car, the officer followed Bundy and radioed in a routine check on the car's license-plate number. When the officer learned that the car was stolen, he gave chase and ultimately subdued Bundy after a struggle.

The recovery of Kimberly Leach's body was the result of good forensic work, not psychic detection. According to Ann Rule:

> When the Dodge van [in which Kimberly had been abducted] was processed, criminalists had taken samples of soil, leaves and bark found inside and caught in its undercarriage. Botanists and soil experts had identified the dirt as coming from somewhere close to a north Florida river.

The discovery of a pile of Winston cigarette butts near the entrance to Suwanee River State Park had focused police attention on the state park and its environs as a possible search area. The ashtray of Bundy's stolen car had also contained Winston cigarettes. A careful ground search of the forests surrounding the park led to the discovery of Kimberly's body under an abandoned shed. The absence of any references in Rule's book to psychics' helping police apprehend Bundy or find his last victim is significant; Rule professes to believe in ESP, and elsewhere in the book relates the (unsuccessful) attempts of psychics to aid police in solving the murders Bundy committed in the Pacific Northwest.

A Final Note

Lady Wonder has gone down in history as the horse that got Joseph Banks Rhine interested in investigating psychic phenomena. Less commonly known is the fact that the horse was also a psychic detective. In 1952 she was asked to locate a missing boy. As was her wont, she spelled out her answer by touching lettered blocks with her nose. "Pittsfield Water Wheel," she replied to the police chief's query. After the water wheel had been searched without success, the police chief realized (in the words of Bergen Evans) that Lady Wonder had made "an equinopsychical blunder or horsegraphical error." He then made the perfectly obvious correction to "Field and Wilde's water pit," the name of an abandoned quarry near the boy's home. The boy's drowned body was ultimately recovered from the flooded quarry. Unfortunately, this case bears a striking resemblance to most of the cases of purported psychic detection. There was a strong will to believe on the part of police authorities and a fiddling of the evidence to make the psychic's prediction come out right.

A Short Annotated Bibliography

Obviously, a complete bibliography of articles on purported psychic detectives would cover many pages, particularly if all tabloid articles were cited. This list is restricted to writings that purport to be scholarly rather than sensationalized.

Farabee, Charles R. "Contemporary Pyschic Use by Police in America." Master's thesis, University of Southern California at Fresno, 1981. This thesis, written for the Department of Criminal Justice, is chiefly remarkable for accepting as veridical tabloid accounts of psychic detectives. The level of "scholarship" of this author is indicated by his repeating a claim that Julia Grant, the wife of Ulysses S. Grant, had psychic powers and that the reason the Grants did not attend Ford's Theater with President and Mrs. Lincoln was that Mrs. Grant had had a premonition of danger. Farabee's source cited for this claim was noted Civil War historian Bruce Catton. Had Farabee consulted Catton's *Grant Takes Command*, he would have learned that Julia

Grant's reluctance to attend the theater with the presidential party stemmed from her presence about a month earlier at one of Mary Lincoln's memorable tantrums; Julia Grant was also concerned because she believed that she had been under surveillance by a strange man most of the day.

Hibbard, Whitney S., and Raymond W. Worring. *Psychic Criminology.* Springfield, Ill.: Charles C. Thomas, 1982. This is similar to the Farabee work mentioned above. The level of scholarship is reflected by references to *New Times, People, Psychic Magazine,* and *Self-Help Update.* Although the publishing house is well known for its catalogue of forensic science and police texts, this work is indistinguishable in quality from pulp potboilers.

Hoebens, Piet Hein. "Reflections on Psychic Sleuths." In *A Skeptic's Handbook of Parapsychology,* ed. by Paul Kurtz. Buffalo, N.Y.: Prometheus Books, 1985. This contains exposures of Peter Hurkos and Gerald Croiset. Readers of the SKEPTICAL INQUIRER will be familiar with Hoebens's two-part exposé of the shameless promotion of Croiset's "miracles," *SI,* 6 (1, 2), Fall 1981 and Winter 1981-82.

Lyons, Arthur, and Marcello Truzzi. *The Blue Sense: Psychic Detectives and Crime.* New York: Mysterious Press, 1991. An interesting if ultimately unsuccessful attempt to evaluate objectively the claims of psychic detectives. I am less impressed than the authors with the sincerity of some of the psychics discussed. I do endorse this comment by the authors: "The data are simply inadequate for the refined analysis we need. The major problem is the absence of a proper baseline against which we can judge any claims of success, especially a lack of information about the character and number of both successes and failures by psychic detectives." In the light of this assessment of the state of evidence, the authors' discussion of the legal ramifications of psychic powers seems premature, to say the least.

Marshall, Eliot. "Police Science and Psychics." *Science,* 210:994-995 (1980). This article discusses Dorothy Allison's claims in the Atlanta child-murders case as well as Martin Reiser's research.

Reiser, Martin, et al. "An Evaluation of the Use of Psychics in the Investigation of Major Crimes." *Journal of Police Science and Administration,* 7(1):18-25 (1979).

Reiser, Martin, and N. Klyver. "A Comparison of Psychics, Detectives and Students in the Investigation of Major Crimes." In *Police Psychology: Collected Papers,* ed. by Martin Reiser. Los Angeles: LEHI Publishing, 1982. Reiser's research involved presenting psychic detectives with items of evidence from major cases. The psychics did not score better than detectives or students.

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Theories Must be Vulnerable to Disproof

[Karl] Popper's basic idea is of theories having to be vulnerable to empirical disproof, with the more rigid and therefore more at-risk theory to be viewed as preferable to the more flexible (or more flabby). . . . The notion of the crucial experiment to disprove a theory antedates Popper, but the appreciation that this is the principal function of experiment and observation we owe to him.

—Sir Hermann Bondi, "The Philosopher of Science" (a tribute to Karl Popper), *Nature,* 358:363, July 30, 1992

FALL 1992 (vol. 17, no. 1): A celebration of Isaac Asimov: A man for the universe, *Kendrick Frazier, Arthur C. Clarke, Frederik Pohl, Harlan Ellison, L. Sprague de Camp, Carl Sagan, Stephen Jay Gould, Martin Gardner, Paul Kurtz, Donald Goldsmith, James Randi, and E. C. Krupp.* Gaia without mysticism, *Shannon.* Gaia's scientific coming of age, *Frazier.* The curse of the runestone: Deathless hoaxes, *Whittaker.* Night terrors, sleep paralysis, and devil-stricken telephone cords from hell, *Huston.* Scientific creationism: The social agenda of a pseudoscience, *Shore.* Observing stars in the daytime: The chimney myth, *Sanderson.* Does an ancient Jewish amulet commemorate the conjunction of 2 B.C.? *Rubincam.* Marianne Williamson and 'A Course in Miracles,' *Gardner.*

SUMMER 1992 (vol. 16, no. 4): Freedom of scientific inquiry under siege, *Kurtz.* Psychic experiences: Psychic illusions, *Blackmore.* The scientist's skepticism, *Bunge.* The persistent popularity of the paranormal, *Lett.* Self-help books: Pseudoscience in the guise of science? *Gambrill.* Ghost lights in Texas, *Lindee.* Big bang theory still lives, *Gardner.*

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Therapeutic Touch: Why Do Nurses Believe?

VERN L. BULLOUGH and
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Sometimes it seems that even the U.S. government supports pseudoscience. Recently the D'Youville Nursing Center, a center established by the school of nursing at D'Youville College, in Buffalo, was given a $200,000 training grant by the Division of Nursing, U.S. Department of Health and Human Services, to treat patients using therapeutic touch and to teach student nurses the technique. The director of the Center, Paul T. Hageman, earned his doctorate in nursing at New York University, which is the main training ground for nurses in the practice of therapeutic touch. This grant, however, is the first official government recognition of the "validity" of such treatment.

The Center's literature defines therapeutic touch as a "method of facilitating healing." Believers claim that it is best practiced by keeping the nurse's hands a few inches from the patients body and that

> during the process of therapeutic healing, the practitioner, with clear focused intent, channels life energy, helping the subject to release "blockages," bringing (his or her) energy field into harmony and balance. (*Buffalo News*, March 10, 1992, C3)

Therapeutic touch in nursing was first put forth in its present form by D. Krieger (1975) in the *American Journal of Nursing* and was amplified in another journal in which she reported a study that claimed increasing hemoglobin levels in response to therapeutic touch (Krieger 1976). Krieger published a book on the theory in 1979 (Krieger 1979). From the beginning therapeutic

Therapeutic touch teaches that practitioners can channel fields of life energy, bringing a patient's energy fields into balance. Surprisingly, some leading people in nursing accept this idea.

touch has been a subject of controversy. Key to the theory was the system developed by nurse theorist Martha Rogers. From her influential position as chair of nursing at New York University she imbued a whole generation of graduate students with her beliefs; many of these students are now in influential decision-making roles in nursing. Rogers (1970) emphasized that her theory of "unitary man" was holistic nursing.

All persons, she argued, are highly complex fields of various forms of life energy, and these fields of energy are coextensive with the universe and in constant interaction and exchange with surrounding energy fields. Wellness is a product of harmonious exchange between an individual's energy field and those of the environment. Krieger (1975; 1979) claimed it was through the hands of the therapist that this energy field could be internalized by the recipient and restore the balance to the body so it could heal itself. The nurse therapist, in effect, acted as a conduit, a channel, so that environmental energy could be transferred to the recipient without physical contact. In short, belief in therapeutic touch grew out of a belief in a holistic universe and the power of energy fields to cause or cure illness.

Early experiments by its advocates demonstrated to their minds that changes did take place in the patient, although some of these could be predicted. For example, a friendly touching of an anxious patient would be likely to increase the probability of lessening the tension, and Krieger, Peper, and Ancoli (1979) found that not only did patients report feeling more relaxed but actual relaxation could be demonstrated on electroencephalograph tracings. Similar findings were reported by Heidt (1981), who dealt with three groups of 30 hospitalized cardiovascular patients, some of whom received therapeutic touch, while control groups received casual touch (taking of the pulse), and still others received no touch. The greatest reduction in anxiety was reported as taking place among those receiving therapeutic touch.

One of the more controversial studies was done by Keller and Bzedek (1986) and reported in the prestigious refereed nursing journal *Nursing Research*. It reported an experimental treatment for tension headache that involved first a period of quiet rest, then treatment of the experimental group by therapeutic-touch therapists and of the control groups by nontherapist volunteers who focused on subtracting from 100 by 7s. In this experiment the researchers avoided actual touch because they wanted to demonstrate that they were not simply using the age-old skills of hands-on nursing, but rather were manipulating harmful energy fields.

> In the therapeutic touch group the intervention began with the researcher centering herself into a meditative quiet and making a conscious intent to help the subject. She then passed her hands 6 to 12 inches from the subject without physical contact to assess the energy field which extends beyond the skin and redirect areas of accumulated tension out of the field. She then let her hands rest around, but not on, the head or solar plexus in areas of energy imbalance or deficit and directed life energy to the subject. (Keller and Bzedek 1986)

The results reported more pain relief with the TT group than with the placebo group. Whether doing an exercise that required considerable concentration is a placebo comparable to a period of relaxation and waving of hands apparently was never questioned by the referees.

Numerous studies followed the original experiments, including some early debunking ones by such researchers as Sandroff (1980a), who said that therapeutic touch was nothing more than a placebo effect brought about by the presence of a loving and caring person. The most devastating criticism was by Clark and Clark (1984), who examined therapeutic-touch studies going back to the early 1960s and then concentrated on early nursing studies. In examining the Krieger (1976) study reporting a significant increase in hemoglobin, they found that the study was poorly conceived and methodologically poor, used inappropriate statistical data, and had resulted in erroneous conclusions. Krieger's other early studies (Krieger et al. 1979) were also examined and found methodologically flawed. Similarly, Heidt's (1981) experiment did not control for the possible placebo effect. The problem in doing research on TT is to demonstrate that real energy passes between therapist and patient, which no one has been able to do. Certainly any reduction in tension is likely to reduce pain, particularly headache pain, but this could also be done by watching a comedy on television or tapes of old movies, as Norman Cousins (1979) did. There have also been other negative findings, such as those by Randolph (1984), who measured the physiological response of 60 healthy college students to a stress-producing film while receiving either TT or placebo touch. Randolph reported no difference between the anxiety level of the two groups. None of the experiments reporting positive results seem to offer an effective alternative placebo when simply resting could bring about improvement. It might also be that patients can simply relax more if they feel someone is doing something. Even when subjects are aware of the possibility of a placebo treatment, double-blind studies have shown a 30 to 40 percent response rate to an inert placebo (Sandroff 1980b).

In spite of the critiques, the popularity of therapeutic touch in nursing seems to be growing, and nurses who embrace modern science in many other regards are willing to believe that TT therapists can control unseen energy fields in the environment through their thought processes. Why should this be so?

One reason is that nurses collectively have a kind of mystical view of the role bedside nursing played in the past before the intrusion of the vast numbers of new pharmaceuticals and before the hospital became such a complex and expensive place. They visualize nurses historically as having been supportive, loving, and helpful persons, who by their interventions brought patients back to health. Such care involved backrubs, bathing, and caring for patients, feeding patients who could not feed themselves, changing dressings, turning patients to prevent bedsores, helping families adjust to the patients' hospitalization, as well as administering drugs and overseeing the more technical and scientific aspects of bedside care (Bullough and Bullough 1978).

In reality, with the development of hierarchical nursing, which includes care by nurses aides and practical nurses, this mystical historical view of nursing has not existed since before World War II, if it ever did. Nurses increasingly have been occupied with administration of medications, checking IV turbes, and monitoring the various machines to which patients are hooked up. By necessity nurses now have to delegate much of the hands-on bedside nursing to aides and practical nurses. Although traditional nurses continue to exist in long-term-

A Statement Presented to

The following is excerpted from a statement drafted by Bill Aldorfer of the Rocky Mountain Skeptics (RMS) and presented to the Colorado Board of Nursing by Linda Rojas, a registered nurse and vice president of RMS. With her were Bela Scheiber, president of RMS, and Susan Houck, another of the group's board members. The group requested a hearing to express concern about the growing use of Therapeutic Touch and other questionable treatments in continuing-education classes for nurses.

We represent a group of citizens interested in the Board of Nursing's current policy on continuing education and would like to pose a few questions regarding this. Specifically, we are concerned about a growing number of continuing-education classes instructing nurses in practices which have no scientific research to back them up.

A few representative class subjects which have been approved for credit in Colorado include: Therapeutic Touch (TT), Neurolinguistic Programming (NLP), Reflexology, Applied Kinesiology, Crystal Healing, and Acupressure.

Where is the data to substantiate any of the claims made by these unconventional practices? What evidence has persuaded the Board of Nursing to lend their tacit endorsement to these practices through the continuing education and relicensing process? Who is accountable?

This, of course, is a consumer issue. What is ultimately at stake here is the delivery of quality nursing care. In our opinion, unproved practices, promising dubious benefits, cannot even be considered harmless—along with the risk of interfering with, or delaying proven, effective therapies, comes the problem of wasting time, money, and other resources.

care facilities, low levels of reimbursement by insurers, both private and public, have meant that most nursing care in such places is given by nurses aides and practical nurses, with nurses performing supervisory functions. Specialized roles have developed with more bedside expertise, such as in critical care, but these roles demand so much continuous intervention and monitoring that even here the mythical bedside nurse of the past is no more. Other nurses, such as nurse practitioners, nurse midwives, and nurse anesthetists, have taken on additional tasks that give considerable patient contact but not in the role of traditional bedside nursing.

There is also a desire to stress the independence of the nurse from the physician in order to emphasize a unique nursing role. Nurses pride themselves on their ability to communicate with patients, to help them face their illnesses effectively.

Therapeutic touch for many then becomes symbolic of what nursing can do. It is probably no accident that the first center for therapeutic touch was established in a Catholic oriented

the Colorado Board of Nursing

As a profession, we are duty-bound to regulate reasonable boundaries of acceptable care. Whenever possible, we must protect our patients from unsubstantiated claims. And here the link between excellence in patient care and quality nursing education is undeniable. . . .

I'm sure we can all agree that, minimally, nurses need scientifically validated standards to provide the public with the best possible care.

While there are members of the nursing profession who readily employ questionable practices, unencumbered by the lack of empirical evidence, it might be wiser for regulatory bodies to seriously contemplate how the application of unsubstantiated claims could have clinical, ethical, and political, as well as legal repercussions. One day, accountability for the tolerance of unproved, unscientific, and questionable policies may be demanded.

In conclusion, we would kindly request the Colorado Board of Nurses to respond, at their convenience, to the following question: "How can Board-recognized credentializing organizations be made responsible and accountable for the content of continuing-education classes?

The Colorado Board of Nursing subsequently appointed a subcommittee to consider better accountability in approving course content in continuing education courses. After a review, however, this subcommittee recommended maintaining the Board's policies. The Board subsequently voted "to reaffirm its previous determination that therapetuic touch was an acceptable study area for continuing education credit," Karen D. Brumley, the Board of Nursing's program administrator, informed Rojas in a June 8, 1992, letter. The Rocky Mountain Skeptics has now asked the Board for copies of the research literature used to support its decision.

nursing school, since basically it is a revised version of the traditional religious "laying on of hands." It differs in that to be effective it does not entail a belief in the method or any other precept on the part of its recipients, just on the part of the caregivers who can allegedly transfer life energy to the patients. Patients are often willing to accept TT as an alternative treatment because they are so disillusioned with the excesses of modern medicine that many of them long for an alternative other than chiropractic.

Nurses' use of therapeutic touch effectively demonstrates why many more or less sophisticated people believe in the paranormal—it fulfills a need. Nurses who believe in therapeutic touch can do all the touching they have time to do in their practice and in the process feel better about themselves for so doing. Moreover anything that would make them feel that they are better nurses probably transfers to the patients. Since most nurses always have access to people with pain and anxiety, it is inevitable that they want to feel they are making

a difference. Even many who don't believe there is a real magnetic force out there adopt some of the concepts of therapeutic touch because it allows them to become much more personally involved with their patients. Moreover, it is something they do without orders from the physician, and often without the physician even knowing.

Thus in spite of the evaluations showing major flaws in studies that claim to demonstrate that therapeutic touch exists, the will to believe takes precedence, and that is frequently the case with the paranormal. However, when the government gives $200,000 for such training, it raises serious questions about the place of pseudoscience in our society.

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The Opportunity to Understand Nature

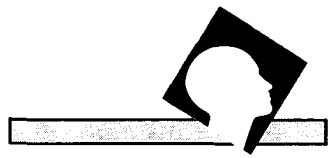
We are aware of prodigious feats in the arts, law, and religion that endure for ages. Yet none of these disciplines offers individuals, as science does, the opportunity to contribute to a progressive understanding of nature. . . . The practice of science enables scientists as ordinary people to go about doing generally ordinary things which, when assembled, reveal the extraordinary intricacies and awesome beauties of nature.

—Nobel laureate Arthur Kornberg, Stanford University, in an editorial in *Science*, August 14, 1992.

Improving Science Teaching in the United States

EDMUND A. MAREK and WAYNE ROWE

The crisis in science education is complex and pervasive. It is manifested by scientific illiteracy, negative attitudes toward science, low enrollments in elective and upper-level science courses, and the much-publicized low scores on standardized tests in science. The solutions and recommendations purported to ameliorate this situation often have been temptingly simple: for example, provide more materials and equipment for science classrooms, require more scientific preparation for teachers, increase science requirements for high school graduation. From this perspective one perceives a crisis that appears amenable to a straightforward solution—do more of the same but do it better. We believe that a different and more complex approach is necessary. To explain our view we will focus upon science education at the pre-college level—science in the common schools—and begin with this question: What is the nature of science in classrooms from kindergarten through high school?



In laboratory-based alternative science programs, students actually do science instead of only reading about it and memorizing facts and results.

Perhaps the most telling fact about science in the common schools is that 90 percent of the science teachers use the textbook 95 percent of the time (Harmes and Yager 1981). Predictably, four activities predominate in such science programs. First, the teacher delivers a fact-filled lecture and the students read the corresponding chapter in the textbook. Next, the students answer the questions at the end of the chapter, and, finally, they take a test. This sequence is repeated through all the chapters of the book, or as much of it as possible within a school year. Occasionally, the teacher includes experiments and audiovisual aids to verify scientific facts, models, principles, and theories. Although this

traditional model of science teaching is referred to as *exposition*, a better description would be *chalk-and-talk / tell 'em and test 'em!*

Most of us are quite familiar with this type of science class; unfortunately, it is all too common in our schools and has been for decades. Exposition curricula are rooted in failing attempts to expose our students to the scientific knowledge exploding before us. Subsequently, as textbooks have grown thicker, course requirements have been increased in vain attempts to "cover the material." The results: generations of evidence demonstrating that science in our schools today is unacceptably ineffective. Students don't like science, don't know science, and don't enroll in elective science courses; and very few pursue science careers.

Alternative Science Programs

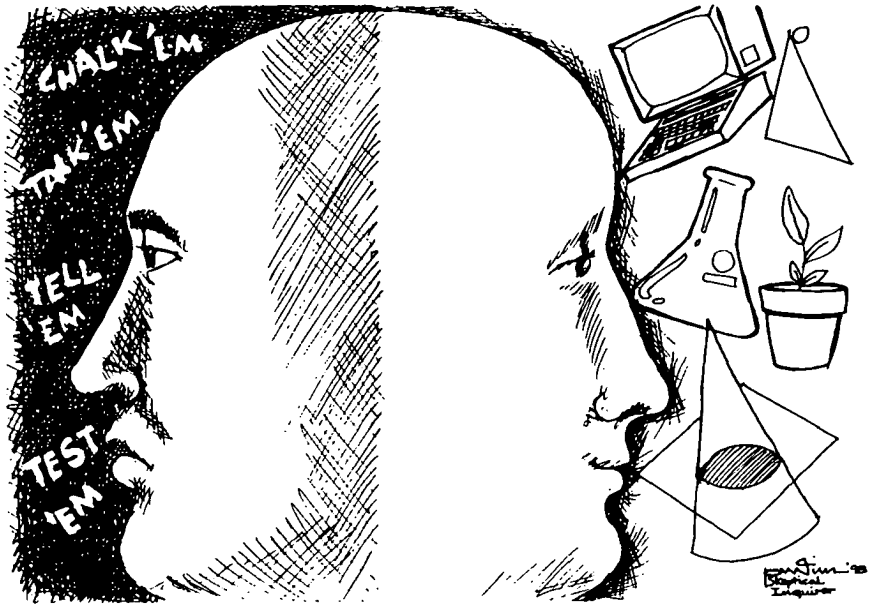
The literature is replete with research and development of curricular alternatives to existing science programs. Curriculum reform projects of the sixties and seventies and summer institutes for science teachers of the seventies and eighties sponsored by the National Science Foundation are products of this research. Yet remember, in the midst of these developments 90 percent of science teachers are reported to use the textbook 95 percent of the time. In spite of the inertia surrounding changing traditional teaching practices in science, many alternative science programs have been developed. Some examples are:

Science Curriculum Improvement Study
Elementary Science Study
Science: The Search
PRISMS: Physics Resources and Instructional Strategies for Motivating Students
Investigation in the Natural Sciences: Biology, Chemistry, Physics
Physical Science for the Middle School

(Additional information about these programs can be obtained from E.A.M.) Let's explore these science programs.

Possibly the most obvious difference between the alternative science programs listed above and traditional science programs is the role of the laboratory. Laboratory experiences are central to these alternative science programs; learning the subject matter (science facts, concepts, principles, and theories) is still an objective, but not the *primary objective* as in expository programs. Other purposes or objectives of laboratory-based science programs include: (1) developing critical-thinking abilities or problem-solving powers (analyzing and interpreting data, identifying variables, building models, synthesizing experiments, making deductions) and (2) developing laboratory skills (using laboratory apparatus, lab safety, specialized scientific lab techniques). As a result of laboratory experiences, students and teachers develop positive attitudes toward science and science teaching while learning science content (Bryant and Marek 1987).

The laboratory also provides the setting for students to experience science as it is *practiced* by scientists. Henri Poincaré—the French mathematician and physicist, described science with this statement: "Science is built up with facts as a house is built with stones, but a collection of facts is no more a science than a heap of stones is a house" (Kelly 1941). Contrary to popular belief, science is much more than a collection of facts. Science is also the process of collecting and making sense out of the facts.



Science is the process of building, and this "house building" is accomplished in the laboratory.

The Laboratory Experience

Albert Einstein said, "The object of science is to coordinate our experiences and bring them into a logical system" (Holton and Roller 1958). This is a sound guidepost for examining the nature of laboratory experiences. Through the processes of observation, measurement, and experimentation, data about scientific phenomena are gathered. These processes are essential scientific experiences if the "logical system" of Einstein's description is to be constructed. In other words, students gain understanding of scientific phenomena (construct logical systems) through the processes of gathering data (observing, measuring, experimenting) and then interpreting those data (coordinating their experiences). Key ideas then are: (1) the *direct involvement* of students in data gathering and (2) the construction of science concepts *by the students from their data.*

Such a laboratory chronology is quite different from conventional "cookbook" laboratory investigations where the students conduct a canned experiment to *verify* the concept *given* to them by the teacher *before the experiment*—that is, if the laboratory time is provided at all. Experimentation should *precede* concept construction. The purpose of the laboratory, then, is to provide the environment in which students can manipulate the materials of the discipline (i.e., biology, chemistry, physics, earth science) to conduct carefully structured experiments that will produce good data. Indentifying the patterns in the data through interpretation, discussion, and guidance from the teacher produces understanding. With sound understanding of a particular science concept, the students can now test it, expand it, and relate it to other concepts. *They are doing science instead of only reading about and memorizing the "products" of science!* Students experience the processes of science while

learning the facts, concepts, principles, and theories of science. Science has become more than a collection of facts.

Laboratory experiences described above served as a foundation for the secondary-school science programs titled "Laboratory Investigations in the Natural Sciences: Biology," "Laboratory Investigations in the Natural Sciences: Chemistry" and "Laboratory Investigations in the Natural Sciences: Physics" (Renner et al. 1985). In each of these programs students begin an investigation about a particular science concept by gathering and recording data in the laboratory or in the field. The teacher then follows this exploration by leading a carefully structured class discussion. The purpose of this discussion is to interpret the collective data of the students and identify the pattern(s) in the data—in other words, to build the science concept from the class data. Of course if the data are in error the students return to the laboratory, or field, to gather additional data. "Good" data are necessary. After the science concept has been constructed, the students are ready to expand the concept through additional experiments, readings, audio-visuals and/or problem-solving. The laboratory model of exploring, concept building, and concept expanding is known as the learning cycle (Karplus and Their 1967) and has been in existence for 25 years, albeit virtually unknown to most science teachers. A complete discription of the development and evaluation of the learning cycle can be found in Lawson, Abraham, and Renner (1989) and its classroom application, in Renner and Marek (1988).

Although the use of laboratory-based science curricula is not widespread, many school districts throughout the country have overcome the momentum behind traditional science-teaching practices and have implemented laboratory-based science programs. Some have done so throughout the districts and some in individual schools or classrooms. Research evaluating these efforts has shown direct and positive effects on science attitudes, science enrollments, and test scores in science (Marek, Eubanks and Gallaher 1990; Marek and Methven 1991; Marek and Westbrook 1990).

Readers of the SKEPTICAL INQUIRER are especially qualified to evaluate competing recommendations intended to improve the status of science teaching in the schools. We invite readers to explore the research papers cited here as well as other research efforts aimed at the crisis in science education. Many such research projects and reports exist, but too often go unnoticed and consequently make little difference in most science classrooms. We also encourage readers to investigate the science programs in their local schools and ask: Is science taught with the learning cycle in the elementary schools? Do the secondary schools have adequately equipped laboratories? Are students enrolling in elective science classes? Are the science teachers prepared to use current laboratory-based science curricula? Enlightened influence at the local level may be more effective in improving science education than naively imposed requirements for more of the same.

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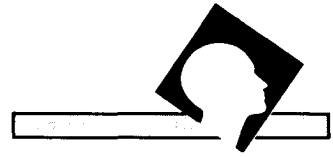
OUT THERE Rob Pudim

"NOTICE HOW THE DILITHIUM CRYSTAL SPINS IN THIS AREA. THAT MEANS THE CAPACITOR IS OUT OF SYNC."

The Big Sur 'UFO': An Identified Flying Object

KINGSTON A. GEORGE

The Air Force obtained some unusual photography while experimenting with very sensitive optics equipment during ICBM launches on the West Coast nearly 30 years ago. Three years ago, in an article titled "Deliberate Deception: The Big Sur UFO Filming" (Jacobs 1989), one of the members of the experimental team claimed that the objects observed were beyond normal technical explanation and implied that the government had been communicating with aliens from outer space. Specifically, he claimed that the team had photographed an "intelligently controlled flying device." He asserted that it emitted "a beam of energy," its capabilities were beyond the science and technology of our time, and it was therefore probably "of extraterrestrial origin." He concluded that we had knowingly protographed a "demonstration . . . put on for our benefit for some reason by extraterrestrials." I was the project engineer for these experiments. This article is intended to provide a more rational account of the sightings of September 1964 and to supply firsthand facts that should loosen any attachment the uninformed might have to Bob Jacobs's version.

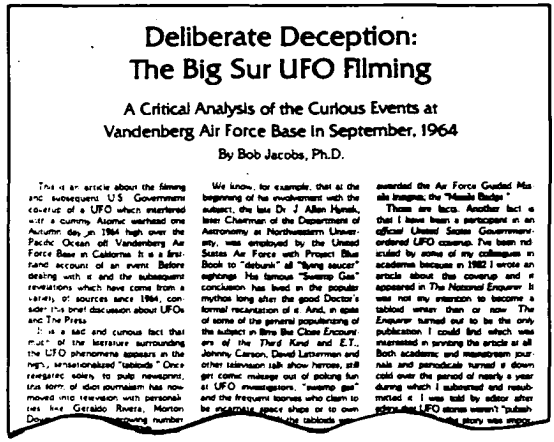


Some unique Vandenberg Air Force Base telephoto data of an Atlas launch were obtained in 1964. But the imagery had nothing to do with UFOs or extraterrestrials.

The Deployment

The United States Air Force conducted a test of a special light-sensitive telescope high up in the coastal mountains in the Los Padres National Forest above Big Sur, California, between August and November 1964. The objective was to collect low-light-level photography of missile launches into the Air Force Western Test Range from Vandenberg Air Force Base, situated a little

over 100 miles to the south. The Big Sur angle presents a unique side-look during test launches, and paper studies convinced some of us that photo data from that location could be of significant value. Local telephoto-lens coverage from Vandenberg AFB is often obscured by the prevailing fog, while the special telescope could be placed at 4,000-feet altitude. Nine of eleven launches from Vandenberg were successfully covered during the three-month deployment (George 1964).



Deliberate Deception:
The Big Sur UFO Filming

A Critical Analysis of the Curious Events at Vandenberg Air Force Base In September, 1964

By Bob Jacobs, Ph.D.

Portion of Bob Jacobs's article in the January 1989 *MUFON UFO Journal.*

The 24-inch mirror telescope we borrowed was built in the 1950s on a modified 5-inch gun mount by Boston University under government contract. Owned and operated by the Range Measurements Laboratory of the Air Force Eastern Test Range, the B.U. Scope, as we called it, later supplied the television network feed during Saturn rocket launches in the sixties and seventies. It employed one of the most light-sensitive systems of the time, an image orthicon television camera tube.

An image orthicon "sees" stars quite well even in twilight. The brightest ones would bloom on the closed-circuit TV monitor to form a blob, with size related to brightness, and also leave a persistence tail behind as the telescope panned across it. The tracking operators used handwheels to constantly make tiny adjustments, and the TV screen resembled a pool of vigorous tadpoles. Today, a similar modern instrument detects stars several orders of stellar magnitude less bright than the best we could do in 1964.

The project was remarkably successful. Soon after we returned the borrowed instrument, a long-term plan was started for a permanent site. An up-to-date telescope is operated today in the Big Sur area by the Western Test Range's successor, the 30th Space Wing of the Air Force Space Command.

I was the project engineer for the telescope experiment, and Lieutenant Bob Jacobs was one of the key field team members who, it later developed, was technically not authorized to view

'The Truth Is Too Important to Hide Any Longer'

UFO Spied on Space Missile — And I Captured It on Film

By DR. ROBERT JACOBS, Ph.D.

I was ordered by the U.S. Air Force to keep quiet about an incredible UFO sighting filmed by official cameras under my control.

EXCLUSIVE

Jacobs had earlier (1982) written this piece in the *National Enquirer.*

Part of the team that used the special light-sensitive B.U. Scope at Big Sur mountain site in 1964 to photograph Air Force ICBM launches. The author, Kingston A. George, who was project engineer for the tests, is at far right, sitting on a wheel and pointing at the camera. Lt. Bob Jacobs is not in this picture. In front of George in uniform are Major Florenz Mansmann and Chief Warrant Officer Guy Spooner. The three men at left are enlisted men from Vandenberg AFB, and the other civilians are B.U. Scope operators and technicians from the Eastern Test Range. (All photos supplied by author.)

Lt. Bob Jacobs is at left with blocked military cap.

the pictures we were collecting. Bob was named the on-site commander by the 1369th Photo Squadron and managed the logistics of the operation at the Big Sur location. Years later, for reasons I can't fathom, Bob claims we witnessed an intelligent UFO in action around an Atlas warhead, followed by an Air Force cover-up. He provides details of his weird claims in an article for the *MUFON UFO Journal* (Jacobs 1989). What we saw was indeed unique and startling, but it definitely does *not* require invoking UFOs with purposeful goals and advanced weapons.

The Threat to National Security

The immediate success of the 1964 project led to a serious problem: we not only could see and gather data on the missile anomalies as hoped, but we also were viewing details of war-

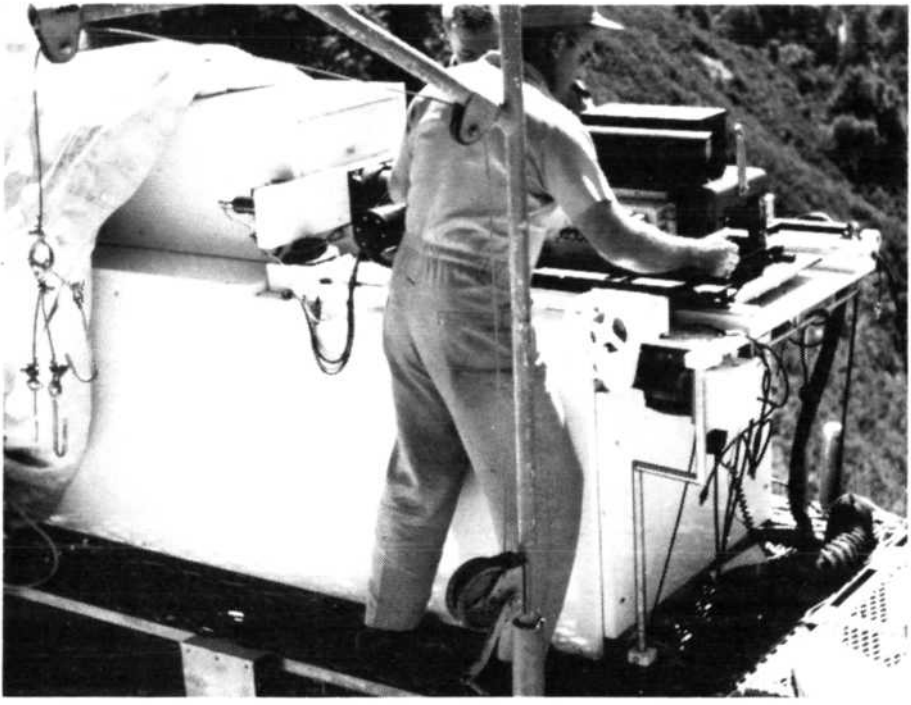
Another photo of the group, with Jacobs at far right holding a camera and standing behind Chief Warrant Officer Spooner.

head separation and decoy deployment that were considered by the Air Force to be highly classified. The Air Force strives to be quite rigid in its approach to handling classified information, yet there were suddenly dozens of airmen, civilians, and contractors viewing data normally reserved to a few persons with the highest level of clearance. Of course at first no one realized the significance of the data.

By the early 1960s, the USSR had beaten the United States into space and set numerous "firsts," demonstrating an alarming degree of sophistication in rocketry and the space sciences. The limits of what was technically possible in space were not well defined for the military leadership. The United States owned radars that could detect incoming warheads thousands of miles from their targets and anti-missile missiles that could theoretically knock out an incoming reentry vehicle above the atmosphere. Could the Soviets nullify our land- and submarine-launched missiles with an anti-ICBM system? Today we can say it was naive to think either we or the USSR could have fielded much of a defense against ICBMs with the technology available in the sixties. But in 1964, the military leadership had to react as though a defense against the ICBM forces was around the corner.

Dawn on September 22, 1964

Just after sundown and just before sunrise, there is a period of time when objects at high altitude overhead are sunlit to an observer who is in dark-



The Image Orthicon and chassis on the top of the telescope.

ness on the earth's surface. About 15 to 20 minutes before dawn, when the sky is quite dark, conditions are poised for optimizing the contrast and range of detection for objects hundreds of miles distant.

Such was the case during an Atlas launch nicknamed "Buzzing Bee" before sunup on September 22, 1964. On the TV screen, we watched the Atlas climb into the sunlight and shed its booster engine section about two minutes after launch. The sustainer engine shut down some two and half minutes after that, all normal for the Atlas, and we could still see the missile tankage against the dark, starry sky! And then, astonishingly, we saw a momentary puff of an exhaust plume, bright enough to "bloom" on the television monitor, and an object separated from the tank—the reentry vehicle (RV) was released to follow its own trajectory to the target area. This was followed by two smaller puffs that also bloomed on the monitor, and then two groups of three objects became distinct from the sustainer tank and the RV. We watched all the objects slowly grow in separation from one another for another minute and a half. Then the objects grew so dim, and the tracking so erratic, that the operation was halted. We had watched the flight for about 8 minutes.

The Atlas was supposed to release decoys, simulated RVs to confuse and overload a missile defense system. The timing of the puffs we had seen was in the right ballpark. Beyond that, we needed expert assistance to help explain the images. We carried a canister containing a thousand feet of 35mm black-and-white film (at that time, video was recorded by a synchronized film camera viewing a

kinescope) to Vandenberg AFB, processed it, and began showing it with some excitement to the Atlas missile development people.

The reaction was startling! Soon after the first showing to the director of operations, all the top brass at Vandenberg had seen it and a copy was being made to fly to HQ Strategic Air Command at Omaha. The classification was quickly changed from Secret to Top Secret. Buzzing Bee had opened an entirely new chapter in ICBM tactical thinking.

Jacobs's Observations

Jacobs reports in the MUFON article that he witnessed a saucerlike UFO circle the Atlas warhead, then direct a laser beam at it that bumped it out of the way and caused it to tumble out of orbit [*sic*] and miss the intended target by hundreds of miles. There are several fundamental flaws in that statement. To begin with, the Atlas was sub-orbital, as all ICBMs are, and it did not miss the target.

The image of the warhead, even if viewed exactly side-on, would be less than six-thousandths of an inch long on the image orthicon face, or between two and three scan lines. We could not resolve an image of the warhead under these conditions; what *is* detected is the specular reflection of sunlight as though caught by a mirror. Practically all the data collected by the B.U. Scope on hard objects was through specular reflection. The same principle is involved in the little hand mirrors provided to military pilots so that an air search can find them by the glint of reflected sunlight if necessary.

We could also see the engine exhaust as a large gaseous plume that dissipated rapidly outside the earth's atmosphere. The small charges that released the decoys were seen as short flashes about as bright as a dim star. Nothing "circled" any of the images.

A laser beam (or any directed-energy beam) is invisible in the vacuum of outer space. We are able to see the path of a laser beam in a surface environment only because of dust particles and ionization in the surrounding atmosphere. A laser beam damages a target not with momentum, but by heating and melting it.

Six conclusions are given by Jacobs in the MUFON article requiring comment.

Jacobs Conclusion 1: "What we photographed that September day in 1964 was a solid, three-dimensional, intelligently controlled flying device." Bob is referring to his impression of something circling the warhead when he says "intelligently controlled." Nothing of the sort happened.

Jacobs Conclusion 2: "It emitted a beam of energy, possibly a plasma beam, at our dummy warhead and caused a malfunction." As noted above, the fact is that energy beams cannot be seen unless they hit something or pass through an atmosphere. We might see a target begin to glow with heat if we were close enough.

Jacobs Conclusion 3: "This 'craft' was not anything of which our science and technology in 1964 was capable. The most probable explanation of the device, therefore, is that it was of extraterrestrial origin." This remark must be Occam's Razor upside-down and backwards! Everything detected was indeed a product of our science and technology, although we had never had a direct view of it before. The Eastern Test Range people who operated the B.U. Scope for us had never seen views like this either, mainly because the telescope was situated to look "up the tail" of the launches on the East Coast. Also, images are seriously degraded by the

light passing through a great deal more atmosphere than on our 4,000-foot mountain.

Jacob Conclusion 4: "The flashing strikes of light we recorded on film were not from laser tracking devices. Such devices did not exist then aside from small-scale laboratory models." In 1962 I evaluated the feasibility of using a carbon-dioxide laser to illuminate launch vehicles hundreds of miles away! In the late sixties the Range Measurements Laboratory at the Eastern Test Range operated two high-powered lasers in the visible spectrum for imaging space objects at night on a regular basis. But Bob is correct in saying that the observations in 1964 did not involve lasers—and, I would add, neither intra- nor extra-terrestrial.

Jacobs Conclusion 5: "Most probably, the B.U. Telescope was brought out to California specifically to photograph this event which had been prearranged. That is, we had been set up to record an event which someone in our Government knew was going to happen in advance." My supervisor at the time, Gene Clary, and I would have been thrilled to have had any kind of support from anywhere in the Government! The truth is, getting permission to use the national forest site, arranging air and ground transportation, finding $50,000 to pay the air freight, and attending to myriad other physical and monetary obstacles, took us the better part of nine months.

Jacobs Conclusion 6: "What we photographed that day was the first terrestrial demonstration of what has come to be called S.D.I. or 'Star Wars.' The demonstration was put on for our benefit for some reason by extraterrestrials." Then what was the reason, and why did nothing come of it? No, the *terrestrial* demonstration period was so fruitful and successful that we established a permanent site at Anderson Peak above Big Sur!

Finding the 'Real' RV

What had we really photographed? Both the U.S. and the USSR had ongoing research programs in the 1960s for defense against ballistic missiles and to develop options to outwit possible defenses. Omitting the technical details, what had happened on Buzzing Bee was that two decoys were fired off by small rocket charges on schedule, but some of the decoy packing material also trailed along and could be seen optically and also by certain kinds of radar. A little cloud of debris around each decoy warhead clearly gave away the false status, almost as well as coloring the decoys bright red.

This, of course, led to more than a little consternation at SAC Headquarters and in higher military circles. Although correctable by redesign, the alarm in the minds of the strategic analysts was that the Soviets could defeat our ICBM decoys by using a few telescopes on mountain peaks in the USSR and relaying information on which objects were decoys to the Soviet ICBM defense command center. An immediate concern was that, although few understood its significance, a raft of people at Vandenberg AFB had seen the data. Vulnerability of a major weapons system is normally classified Top Secret. How could this matter be kept from leaking out?

Issue Resolved

As might be expected, the military reaction came swiftly. Everyone who was at the telescope site or had seen the film had to be identified. All, including Jacobs and myself, had to be questioned on what they had seen and what they thought it meant. Each was

cautioned not to mention what was on the film to anyone and not to discuss it with others—even fellow workers who had originally seen it at the same time! None of us had more than a guess at the meaning, and the civilian intelligence experts who did the "debriefing" gave no hints.

Weeks later, my clearance level was increased to allow me to see the films again and analyze them. I don't think Bob Jacobs ever gained the required clearance. The people later assigned to operate the equipment and carry the films around were subsequently cleared to the required level. The Top Secret film was marked for downgrading and declassification after 12 years, but its utility was over after a few months. Top Secret storage is too difficult and expensive for keeping items of dubious worth, and the film and related materials were all destroyed long before the 12 years were up. Only a few of us even remember the incident today, and Bob Jacobs is being both safe and cagey in observing that the Air Force denies the existence of the film or other hard evidence.

The photo site established on Anderson Peak has undergone many changes and improvements over the years, and has continued to collect data during ICBM launches of high value to national defense. Much of the photography has needed security protection and the processes are in place to provide it without fanfare. There has never been a repetition of the security panic that followed the events of September 22, 1964, when Buzzing Bee literally and figuratively lit up the sky over the Pacific.

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Physicist/engineer Kingston A. George retired recently after 30 years of Air Force Civil Service and continues as a private aerospace consultant. His initial appointment in 1961 was as an operations research analyst for the 1st Strategic Aerospace Division at Vandenberg AFB, California, where he pioneered many aspects of range safety and range instrumentation systems deployment. As chief engineer for safety at Vandenberg AFB in 1989, he was honored in Washington, D.C., as the recipient of the Air Force Association's Senior Civilian Manager of the Year Award. He currently resides at 937 Diamond Drive, Santa Maria, CA 93455.

Truth and Consequences

The consequences of a claim that something is true are entirely irrelevant to the issue of whether the claim is true.

—Steven Goldberg, *When Wish Replaces Thought: Why So Much of What You Believe Is False* (Prometheus Books, Buffalo, N.Y. 1992), p. 21.

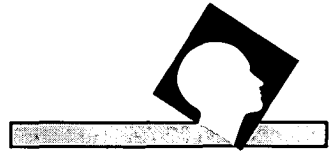
The Strange Case of the New Haven Oysters

PAUL QUINCEY

The inhabitants of our seashores are often made aware of two great timekeepers in the sky. The sun provides us all with a 24-hour cycle of light and heat, but shore dwellers also need to follow the ebb and flow of tides, the average time from one high tide to the next being set by the moon at 12 hours and 25 minutes. Many species have adapted their behavior to accommodate these natural rhythms, and the resulting biological cycles form part of a well-established field of study. (See, for example, Wheeler 1990.)

One interesting aspect is the way these cycles can persist for plants and animals moved to artificially constant surroundings. The question arises whether they mark time with an internal clock or whether they can still sense the sun and moon after the obvious clues have been suppressed. If the latter is true, and animals can tune into our local cosmos via very subtle signals, some versions of astrology might gain a certain credibility.

Tidal rhythms provide a simpler test case than the more common daily rhythms, as it is much easier to isolate something from the tides than it is from the daily round of heat, light, and general bustle. If a creature with a tidal rhythm were transported to a new location and found to adjust its rhythm to the times appropriate locally without being exposed to tidal water, this would be good evidence for the "tuning in" hypothesis.



A persistent claim that oysters can sense where the moon is, even when they are indoors, rests on a single, inconclusive experiment.

Known Lunar Influences

There need be nothing paranormal about these signals, as the moon causes gravitational and

magnetic variations with the same periodicity as the tides. They are monitored by geophysicsts, so subtle clues are certainly available to any displaced shore life. But is it likely that living creatures could sense them directly?

The only measurable gravitational effect causes a small change in weight. When the moon is on the horizon, at moonrise and moonset, everything tends to weigh a little more than at times of lunar transit, when the moon is highest in the sky or furthest below the horizon.[1] If this is not apparent from your dieting chart, it is because the maximum possible variation is just 0.000035 percent. For a large person this might amount to 35 milligrams—less than the weight of a small postage stamp. Specialized instruments can measure such a change, but only when they are carefully protected from vibration and drafts. This is because weighing machines (and gravity sensors) can't help acting also as acceleration meters, so that any movement registers as a change in weight. Just try weighing yourself while waving your arms around. In the same way, even if an animal possessed an amazingly sensitive gravity sensor, the tiny lunar effect would be utterly swamped by any small movements it made.

The moon's effect on the earth's magnetic field is even more elusive, as it is only a small addition to much larger variations, mainly due to the sun. The moon's effect is only apparent after analyzing several weeks' readings so that day-to-day changes in the solar cycle can be averaged out, and then only when sunspot activity is low (Chapman and Bartels 1940). It would be hopeless to try to track the moon with a compass.

From what we know, then, it would be very curious if an animal could sense a tidal rhythm without feeling the tides. Maybe it's not impossible, but the evidence in favor would need to be pretty persuasive. So what is the evidence? Whenever such a claim is made, one experiment stands out as the least ambiguous and the most quoted, respectfully mentioned by Michel Gauquelin (1967:118), Culver and Ianna (1988:183), and the *Encyclopaedia Britannica* (1974)—that of the New Haven oysters.

The Oysters Experiment

The experiment was done in 1954 by Frank A. Brown of Northwestern University (Brown 1954). (The same results, without mention of any follow-up experiments, are presented in Brown et al. 1970). A batch of oysters was taken from the Atlantic Ocean off New Haven, Connecticut. Then, after careful packing and a few days' wait they were taken 800 miles inland to Evanston, Illinois, near Chicago. Here they were kept alive and well in seawater tanks in a photographic darkroom. To monitor their activity they were connected by a spring and thread arrangement to a pen recorder; this automatically charted when the oysters were open or closed over the next 46 days.

The data were analyzed for both solar day (24 hours) and lunar day (24 hours and 51 minutes) periodicity. The solar day rhythm does not concern us here, but in order to avoid confusion between it and the lunar rhythm it was necessary to analyze 15 days' worth of data at a time—it is only possible to see the lunar rhythm as an average for a 15-day period. The 46-day record could then show how the oysters' activity varied through the lunar day over three consecutive 15-day periods, the first

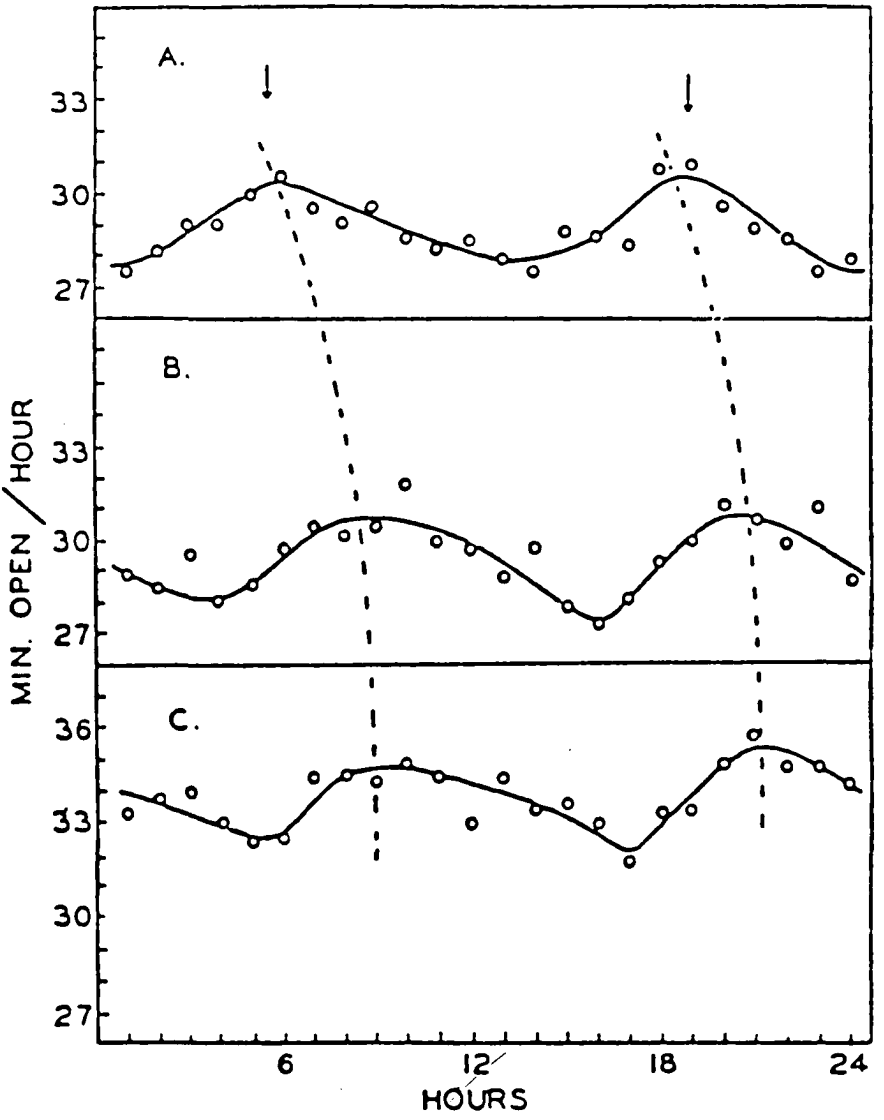


Figure 1. The oysters' activity rhythms through the lunar day, as shown by Brown (1954). The three graphs show the average behavior over consecutive 15-day periods in a controlled environment.

day's data being discarded.

All the lunar rhythm information is contained in just three graphs, and these are shown in Figure 1. The results appear to show something very remarkable. In the first period, there was a small but definite tidal cycle—two tides per lunar day—the peaks of activity coinciding, we are told, with times of high tide at New Haven. The rhythm continued in the second and third periods, but the peaks had shifted to times about three hours later. Now, we are told, they coincided with the times of lunar transit at Evanston, their new loca-

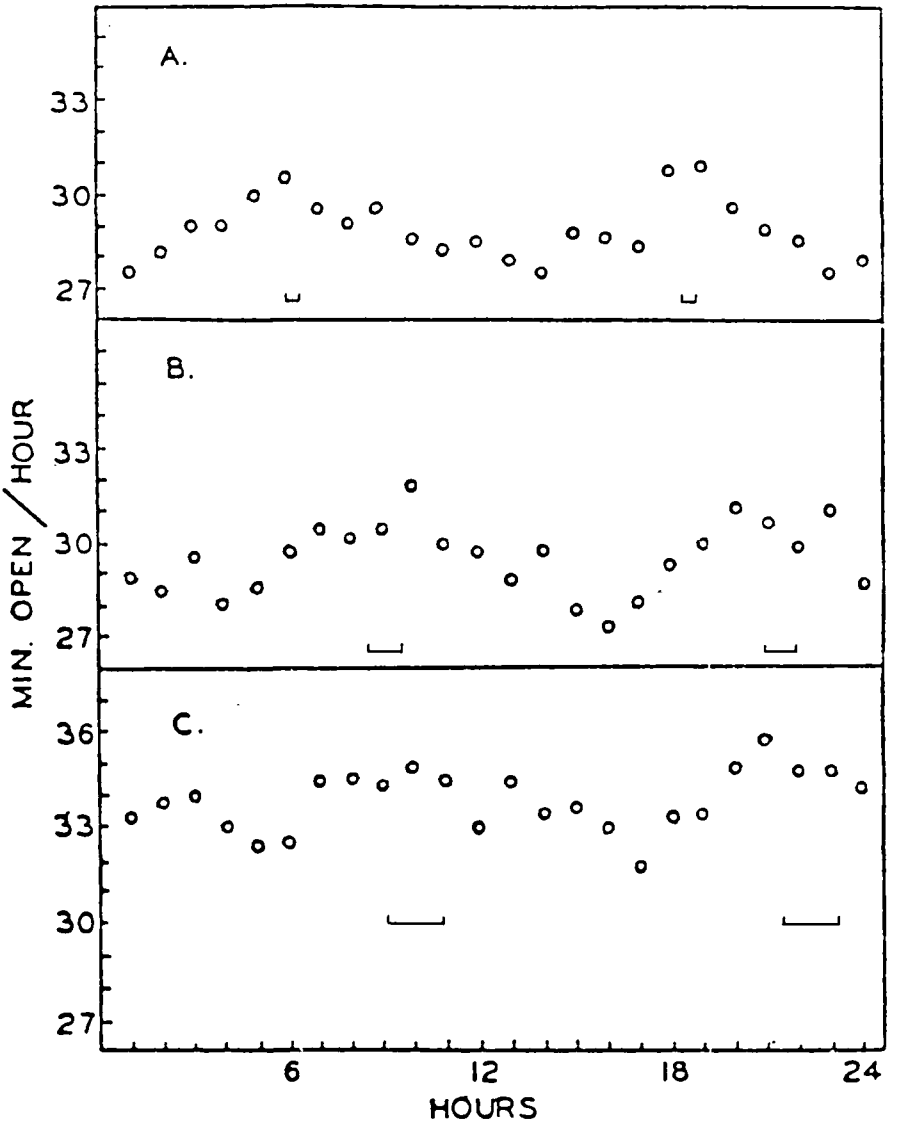


Figure 2. The same data as Figure 1 without the guidelines. The new lines are the author's estimates of the times of peak activity, assuming the activity has tidal periodicity.

tion. Here at last is the nub of the matter. Deprived of their home tides, the oysters seem to have synchronized their activity with the movements of the moon at their new location. How did these oysters in their dimly lit water tanks sense where the moon was?

A Closer Look at the Data

Brown's observation that the oysters had synchronized their activity to the local lunar transits was reached purely by inspection of the graphs in Figure 1. There was no further analysis of this data, nor were there other sets

of data in support. Before we guess what kind of moon detector an oyster might keep up its sleeve, then, it is well worth checking this evidence in more detail.

First, consider the solid lines drawn through the results. They are not part of the data; nor are they the results of a theoretical model. They are instead what are known in the trade as "guides to the eye." In practice, this means they are drawn somewhere between where the data lie and where the author would like them to be, possibly giving a misleading impression. Figure 2 shows the same data, without the guiding lines. Readers are invited to fit a tidal rhythm curve to each set of data to obtain the times of peak activity, remembering that the peaks should be 12.4 hours apart. My own attempts to locate the peaks produced the ranges of times indicated. The uncertainties in the data already make it a little rash to reach radical conclusions.

Now the implication in the paper is that the time difference between the arrows in the first set of data and the dotted lines in the second and third sets is just that between high tide at New Haven and lunar transit at Evanston. The paper omits telling us just how long this really is, but it is a fairly simple matter to look it up in suitable almanacs. The average time difference is in fact 2.2 hours. Compared with my best estimate from the data of 3.5 hours, or even the values indicated in the paper (about 2.2 hours for the later peak but 3.3 for the earlier one), the experimental result is hardly a convincing match.

It should be clear that the evidence for these oysters' sensing the moon is weak. Even so it might still seem suggestive—after all, the peaks have moved in the right direction by an amount not altogether different from the one prescribed. But there are other reasons the lunar link is unlikely.

Do Oysters Read Bad Textbooks?

One big problem is that there is little point in this exercise from the oysters' point of view. If the oysters were able to sense the moon at New Haven, they would have found that high tides occurred, on average, an hour and a quarter before lunar transit. It would then be logical for them to expect a similar difference at Evanston, so that the expected shift in the activity peaks would be just one hour.

There is no good reason to expect high tides to occur at lunar transit. Only naive versions of tidal theory suggest that there is—a look at a few tide tables shows that the oceans have other ideas. Why should the oysters want to synchronize with lunar transits in the first place?

An Alternative Explanation

The shift in the activity peaks could easily have a quite different explanation—the oysters' clocks running slightly slow. If the oysters, in the absence of regulation by tides, let their activity period lengthen by a few minutes, the peaks would move on a little each lunar day. Averaging over 15 days would mean that the second set of data differed from the first in just the way that was observed. The oysters' average activity period would have needed to be about 12 hours and 31 minutes—6 minutes too long. The "slow clock" hypothesis should be distinguished from the "moon tuning" hypothesis by the third set of data: in the former case, the peaks should keep moving; in the latter, they should remain where they are. Alas, the third set isn't clear enough to settle the question—there seems to be a small extra shift, but the cycle is less pronounced and harder to pin down.

It is worth mentioning that if the lunar cycle is both slow and dying away, this extra shift should be smaller than the previous one. No one could seriously point to that third set of data as proof of anything unusual.

So the case of the New Haven oysters turns out to be distinctly fishy and probably not very strange. While it is high time the matter was resolved by more convincing experiments,[2] the real mystery is how the dubious conclusion that oysters can set their clocks by the passing of the moon has found a durable place in scientific lore.

Notes

1. The forces responsible are usually called "the tide generating forces." Their effect on gravity is slightly enhanced because they also distort the shape of the earth (Cook 1969). To be pedantic, there are also small sideways forces that swing from side to side with the tidal period, so that the vertical changes direction by around 0.00001°. These are crucial to the effect on the oceans; but like the weight change, they would not be noticed by an animal that moved in the course of the day.

2. The most important aim would be to reduce the scatter in the results by using a larger sample. It would also be valuable to have a control set that was not moved and a third set that was moved in an easterly direction. This last set, if it retimed itself to lunar transits, would require the oysters' clocks to run fast. This would be much more unusual than their clocks running slow.

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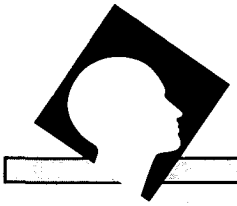
Science Cannot Be Mechanized

[Karl] Popper's teaching . . . stresses that science is a creative subject. . . . The generation of science cannot be mechanized. There is no possibility of defining a "scientific method," a prescription that anybody can follow and "make science." Scientists have to be people of flesh and blood, of passion and drive, of daring and courage.

—Sir Hermann Bondi, "The Philosopher of Science" (a tribute to Karl Popper), *Nature*, 358:363, July 30, 1992

Book Reviews



The Commonality of Hallucinations

Fire in the Brain: Clinical Tales of Hallucination. By Ronald K. Siegel. Dutton, New York, 1992. 275 pp. Hardcover, $21.00.

ROBERT A. BAKER

Knowledgeable psychologists, psychiatrists, neurologists, and other experienced clinicians are well aware that many perfectly normal, healthy, sane, and emotionally stable individuals will occasionally hallucinate—experience false perceptions—and subsequently may develop fixed delusions, i.e., false beliefs. These facts are not as well known by the general public. To remedy this situation Ronald Siegel, a UCLA neuropsychologist and the author of the authoritative study of the behavioral effects of drugs, *Intoxication: Life in Pursuit of Artificial Paradise* (Dutton, 1989), has selected from his extensive files 17 of his most unusual cases and, in his new book *Fire in the Brain*, has made it very clear that when normal and ordinary people are exposed to highly abnormal or extraordinary conditions they will, almost invariably, hallucinate.

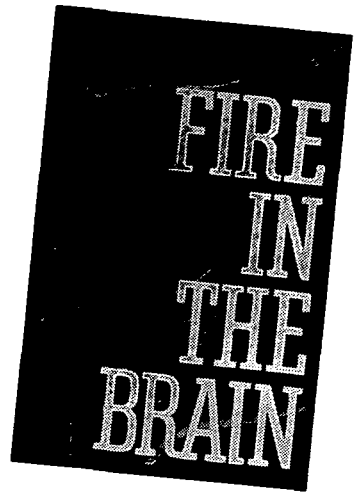
Conditions favorable to hallucinations include high fever, sensory isolation, terminal physiological conditions due to illness, physical and mental exhaustion, sleep deprivation, drugs of various kinds, as well as most sorts of extreme physical and emotional distress. Hallucinations also show up regularly during vivid dreams and are frequently reported as encounters with "ghosts," "demons," or "extraterrestrials," and they are common under conditions of extreme fatigue, i.e., in physical and psychological states of near exhaustion.

To better understand these hallucinatory states Siegel himself frequently becomes a psychological subject. Early in his career, while studying at the University of Chicago with the psychologist Heinrich Kluver, Siegel became fascinated with the problem of how other beings experience the perceptual world. When Siegel questioned Kluver about how one could comprehend the world of a fly, for example, Kluver told him, "Become the fly!" Siegel also learned from Kluver that "even in our wildest and maddest hallucination the mental landscape is the same for all of us." Recognizing that the laws of brain functioning and the principles of human perception are the same for everyone, Kluver knew that if and when we are subjected to such extreme environmental conditions or pressures we, too, will hallucinate. Siegel learned this firsthand by immersing himself in the warm, 93-percent epsom-salt bath of John Lilly's flotation tank for several hours.

During this swim, Siegel met a number of little gray extraterrestrials who threatened to carry him away, as well as a friendly, naked Buddha with large Mickey Mouse ears, who held a pink balloon and informed Siegel, "I am *them!*" To better understand the experience of a Vietnam veteran who came to him for help, Siegel had himself locked inside a bamboo tiger-cage similar to the kind used by the North Vietnamese to torture POWs. Such personal experiences and encounters have, as one would expect, provided Siegel with insight and understanding that makes him not only an unusually skillful therapist but a superb storyteller as well.

In his clinical work Siegel has been challenged by some truly bizarre cases. One involved a surgical patient who jumped off a hospital table to hotly pursue a ghost. Another was that of a Hollywood actress who saw Voodoo priests throwing darts at her whenever the camera lights were turned on in the studio. These stories are only introductory sidelights, however. The major portion of Siegel's book is devoted to detailed and informative case histories of 17 individuals who underwent a number of very real and very terrifying experiences. Siegel presents each of these cases in the form of a mystery that he, as the clinical private investigator, unravels and solves. Divided into four parts, *Fire in the Brain* provides four cases dealing with visionary drugs, four concerned with dreams, five involving imaginary companions, and four of people facing life-threatening danger.

In the section on visionary drugs, Siegel reports that people under the influence of marijuana often report seeing a black curtain covered with disembodied eyes. This result, issuing from his lab under controlled conditions of drug administration, is also



reported from India, Japan, and England, where pot users had the identical hallucination. Drugs were also responsible for a music teacher routinely hearing the voice of God and for the confusion of two women who correctly insisted—against all tangible evidence—that they had been raped. Also reported is the intriguing case of a pool hustler haunted by LSD flashbacks.

As for dreams, the most common of the nondrug gates to hallucinations, it is interesting to learn that the "gate" stays open for some people even when they are awake. Hypnopompic and hypnogogic dreams are very common. Many people wake from a deep sleep (hypnopompic) to find an incubus (male demon), or a succubus or old hag (female demon), a ghost, or some other night terror sitting on their bed. These same visions, or "waking dreams," can occur when one is falling asleep (hypnogogic). Other individuals, sometimes in the middle of a lovely sunny day, will see a horrible vision. One of Siegel's most fascinating cases should be read by all believers in UFO abductions. It involved a father and his adult son who took a wild ride on an alien spaceship. Curiously enough,

"the scenery they rode through was the same hallucinatory landscape seen by earthbound dreamers." And, when Sheila, a professional nurse, was deprived of sleep for an extended period her brain started dreaming while she was awake and she saw little black swastikas on the bedsheets of all her patients.

Using the pages of *Omni* magazine, in 1988 Siegel carried out an international survey of hallucinatory experiences. It not only confirmed what earlier surveys had shown but also revealed that 79 percent of his respondents reported having occasional hallucinations. Moreover, a third of this group said they had also been fooled into thinking the hallucinations were real. An interesting corollary of the survey was the report that 31 percent of the group also had imaginary playmates as children. It seems that a fertile imagination is all that is needed for us to mix fantasies with reality. Many people never let go of their childhood fantasies, and when grown up they still live in a world of dragons and invisible rabbits. In the section on imaginary companions, one of Siegel's most poignant cases deals with a man who so longed for a daughter that he mentally created one: a flesh and blood "ghost"! Equally intriguing is the case of a sailor who hallucinated that he was caught in a storm in the Bermuda Triangle. In another case, a lovesick young man is so haunted by the face of his girlfriend that he sees her everywhere he looks and is unable to control when and where she appears. Finally, there is the case of Henry, a bored teenager who takes an invisible assassin named Sergeant Tommy to school with him to deal with his substitute teacher.

In the last section we learn that too much of the wrong stimulation can also cause the brain to hallucinate and that when ordinary people are subject to life-threatening danger they will often find their perceptions betrayed. Siegel makes this crystal clear with his final four cases, involving: (1) an ex-POW who during his imprisonment was horribly abused both physically and psychologically; (2) a grandmother locked in a small closet by a burglar and threatened with death; (3) a torture victim who escaped the pain by traveling to a mentally created paradise; and (4) a number of beautiful afterlife visions experienced by an elderly professor who survived a near-death experience. As an afterthought to this fourth case, Siegel notes, "Just as physiological shock helps keep the body together, the near-death experience keeps the potentially disorganizing emotion in check" (p. 255).

In this continually fascinating, enlightening, and entertaining book, Siegel ends forever the notion that hallucinations are the exclusive domain of the insane. Images that may be bizarre but that are in no way "crazy" arise from many common biological experiences and common psychological and physiological reactions of the brain and nervous system to either excessive stimulation or extreme deprivation. It is certainly high time that many of the people in the mental-health establishment who believe in demon possessions and alien abductions become aware of this fact. For all such individuals, and for anyone having even a passing interest in the human nervous system and the things that can go wrong with it, Siegel's *Fire in the Brain* should be required reading—especially in 1992-1993, the third year of the Decade of the Brain (1990-2000).

Robert A. Baker is emeritus professor of psychology at the University of Kentucky and author of Hidden Memories: Voices and Visions from Within.

Jacobs's Alien-ation of Reason

Secret Life: Firsthand Accounts of UFO Abductions. By David M. Jacobs. Simon & Schuster, New York, 1992. 336 pp. Hardcover, $21.00.

VICTOR COSCULLUELA

On the positive side, David M. Jacobs's *Secret Life: Firsthand Accounts of UFO Abductions* is a useful addition to the ever-growing UFO-abduction literature, whether one is a skeptic or a believer like Jacobs. First, the work is based on the testimony of about 60 so-called abductees, whereas many other such books base fantastic claims on a mere handful of cases, at best. Second, Jacobs makes a detailed and highly organized attempt to reconstruct the order of events in the usual UFO abduction. Third, he devotes an entire chapter (11) to addressing various debunking theories. However, while *Secret Life* has these virtues, it is also marred by serious vices.

Jacobs notes that one of the more bizarre claims made by hundreds of self-proclaimed UFO abductees is that their journey to a UFO involved passing through walls, ceilings, and closed windows, despite the fact, which he acknowledges, that it is "exceedingly rare" to find any witnesses to these events. (Jacobs actually mentions no witnesses.) Unless one is already a hard-core believer in UFO abductions, it would seem that this fact alone establishes the delusive nature of such experiences (assuming the alleged abductees actually had some kind of experience). But Jacobs draws a different conclusion: "Although it sounds impossible, the physical mechanism that allows people to pass through solid objects probably renders them invisible" (p. 51). Rather than attempt to explain why abductees believe (assuming they do believe) they have done the impossible, Jacobs adds another miraculous element to the abductees' already unbelievable tales, thereby making the hypothesis of actual abduction by a UFO less plausible than virtually any alternative.

Later Jacobs suggests that UFOnauts are capable of rendering even their vehicles invisible (p. 306). This leads him to ask, "Why are UFOs sighted at all?" Given Jacobs's insistence that UFOnauts are anxious to maintain secrecy, one would expect them to fully exploit their capacity to render physical objects invisible. Jacobs admits that "if secrecy is a priority of the abduction phenomenon, then the reason for UFO sightings is unclear" (p. 306). His comments do not remove the mystery.

In discussing the "incubatorium" reported by various abductees, we find Jacobs clearly leading the testimony of one of his subjects. When asked to describe the appearance of the organisms he saw in an incubatorium, one of Jacobs's abductees responds that they looked like "hamsters . . . bald hamsters." A moment later the abductee retracts this and claims that "they don't look like hamsters." Taking advantage of the abductee's confusion, Jacobs immediately asks, "Are you looking at babies?" He finally gets the answer he's looking for: the organisms are hybrid fetuses (pp. 154-155).

Jacobs even seems to be engaged in pressuring his subjects to confirm the details of his theory concerning

UFO abductions. When discussing the babies that are allegedly being shown to abducted women by UFOnauts, he admits that many women "claim at first that they only saw the top of the baby's head. Others say they held the baby so close to them that they did not get a good look at it. *But in fact they do see the baby*" (p. 172, emphasis added). One gets the impression that Jacobs is creating an environment in which his subjects are strongly encouraged to "recall" hybrid fetuses at all cost.

Another objectionable feature of *Secret Life* is Jacobs's tendency to focus only on general similarities found in descriptions of aliens and the hybrid fetuses they are allegedly producing with the help of abductees. For instance, from a few cases in which subjects reported that these hybrids had extremely light-colored skin, he infers that they are characterized by "pale-white or grayish skin [which] is almost translucent" (p. 172). This description is given with great confidence despite the fact that a few pages later one abductee describes these babies as "grayish *black*" (p. 179, emphasis added). No attempt is made to account for this; nor is the apparent inconsistency even acknowledged.

Elsewhere, Jacobs reports that UFOnauts have "hands and fingers [that] also resemble humans' although they are thin and long. . . . They have no fingernails" (p. 225). This gives one the impression that there is great consistency in the descriptions given of UFOnaut hands. However, Whitley Strieber, perhaps the most famous abductee, reports in *Transformation* (New York: Avon, 1989, p. 202) that the being in one of his numerous experiences had "black, clawlike nails." Furthermore, as Philip J. Klass notes in *UFO-Abductions: A Dangerous Game* (Buffalo: Prometheus Books, 1989, p. 41), some abductees even claim that UFOnauts have feathered fingers, others claim that they have webbed fingers, and still others report clawlike hands. But Jacobs will not take these disagreements over detail seriously, or even mention them; instead, vague similarities in description are presented as proof of UFO abduction, despite the fact that anyone can discover what UFOnauts are supposed to look like by leafing through one of the hundreds of books on the subject. (Thanks to the bookcovers on Strieber's best-selling contributions to UFOlogy, it is virtually impossible for one to avoid having prior information about the facial appearance of UFOnauts.)

A quite disturbing feature of Jacobs's research is that he personally hypnotizes his subjects. Jacobs, a history professor at Temple University, reassures his readers that he is qualified to act as a hypnotist. He reports that another well-known abduction-believer, Budd Hopkins (who, though trained as an artist, also feels called upon to act as a hypnotist), "invited me to sit in on his sessions. I discussed techniques with him and other (unnamed) researchers. I read books about hypnosis. I attended a hypnosis conference. I learned about the dangers and pitfalls of hypnosis" (p. 23). But some of Jacobs's remarks suggest that, at least in his early sessions, he was not qualified to practice hypnosis. For instance, he admits that when a female subject arrived for hypnosis, "I had *no idea* what was going to happen. . . ." (p. 23, emphasis added). Luckily, she had been hypnotized before. Consequently, "It was easy. The difficult part was asking the right questions, in the right manner" (p. 23). One suspects that Jacobs indeed asks the "right" questions—those that produce the "right" answers.

Even if we assume that Jacobs is

now a qualified hypnotist, it is clearly illegitimate for him to practice hypnosis on subjects claiming to be UFO abductees. Jacobs is clearly not a neutral party in the UFO debate. Those who come to him for hypnosis know that he is an abduction-believer. They are, therefore, under pressure to produce the "right" answers.

A deep paradox in *Secret Life* concerns its conclusion that alien abductors are capable of maintaining awesome control of the thoughts and actions of abductees, whether they are in the presence of the abductees or not: "They interfere with people's volition and force them to do things against their will—and they can do this from afar. They mitigate fear and stop physical pain. They institute selective amnesia, communicate telepathically, and create complex images and scenarios in people's minds. They generate at will sexual arousal and emotions such as love, fear, and anxiety. They produce orgasm with mind manipulation" (p. 221). In short, "They can physically and mentally control humans" (p. 279).

However, as noted earlier, the aliens are "fearful of being detected" (p. 221); "secrecy is a priority of the abduction phenomenon" (p. 306).

All of this raises the question: If UFOnauts are capable of controlling the thoughts and actions of human beings, why would they allow people to recall their experiences (with or without hypnosis)? Why not manipulate the victims' minds so that they believe their experiences were entirely delusive? Why not totally erase any memories of these alien encounters? Finally, why wouldn't these mind-manipulating aliens use their abilities to subtly prevent abductees from talking to people like Jacobs? Aliens with the capacities Jacobs imagines would have no trouble preventing the reports that give rise to books like *Secret Life*, books that threaten to expose their nightmarish genetic agenda.

One tempting prosaic explanation for the existence of UFO-abduction reports would include some or all of the following points: (1) much of the material in UFO-abduction reports can be derived from innumerable books by UFOlogists, the television appearances of UFOlogists like Hopkins and abductees like Strieber, and other sources; (2) abduction claims can reflect ulterior motives (e.g., economic gain); (3) those who are sincere in their reports could easily have dreamt or otherwise hallucinated the entire episode, deriving material from the sources mentioned in claim 1; (4) those who suspect that they experienced something odd (e.g., "missing time") are pressured to "recall" their experiences as UFO abductions to fit the theorist's hypothesis.

In Chapter 11, Jacobs attempts to dispose of such explanations as well as several others. Against the assertion that material in abduction reports can be derived from books, television, etc., Jacobs claims that "abductee claims contain events that include exact and minute details of procedures known only to a few UFO researchers" (p. 284). One wonders, however, what occurs when an alleged abductee begins reporting common material but appears to have only vague recollections of details. Is it really unlikely that the anxious UFOlogist will subtly pressure and lead the subject into "recalling" something known only to "a few UFO researchers"? For instance, Jacobs reports that one subject recalled "a beautiful woman.... He described her as having 'black hair.' Through *meticulous questioning*... the false memories fell away and the abductee independently realized that it was her black eyes that he had been describing and not

her hair. In fact, she had no hair. . . ." (p. 324, emphasis added). Such passages give one the impression that any report that confirms the theorist's expectations, except for a few small details or a few gaps, is pressed into acceptable form by the application of "meticulous questioning."

Further, Jacobs holds "support-group sessions to allow abductees *to discuss their ideas and meet others who have had the same experiences*" (p. 326). So even when the material in an abductee's report cannot be attributed to books, movies, and so on, it is possible that the details are derived from other abductees at these sessions.

As for the suggestion that many abduction claims result from ulterior motives, Jacobs says that very few abductees appear on television and, so far as he knows, of the subjects he and Hopkins personally studied, "none has profited monetarily from these media appearances" (p. 284). Even if this is so, it cannot be denied that the attention abductees receive from UFOlogists may have a certain value in the mind of the abductee. Further, can anyone doubt the appeal of being the potential or actual subject of a best-seller? Finally, the abductee may hope to arouse the interest and sympathy of those near him; national attention may not be desired.

As for dreams and other hallucinatory experiences, Jacobs claims that "the abduction phenomenon has no strong element of personal fantasy" (p. 290). Given the case I mentioned, where a male subject reported a beautiful woman with whom he was to have sex, there is absolutely no plausibility in Jacobs's claim.

However, Jacobs adds that "nothing in our society or in people's backgrounds . . . would call forth such concepts as imaging, Mindscan, staging, and hybrid touching" (p. 290), features of abduction discussed by Jacobs. But how unlikely is it that these details arose coincidentally in a small number of cases and were then forced upon more by means of "meticulous questioning"? Further, Jacobs underestimates the possibility that the similarities in reports—when they cannot be explained by appealing to published material, movies, television, etc.—are due to the fact that many abductees know one another. Anyone can see this from Hopkins's book *Intruders*. Some of Jacobs's subjects are even related to one another (pp. 327-328). Once the UFOlogist is impressed by the similarities in a few cases, leading questions and other pressure techniques can easily lead to greater uniformity in new reports. Soon it will seem to the careless investigator that such similarities can be explained only by the UFO-abduction hypothesis.

Jacobs is aware of this kind of objection (claim 4 above). He replies: "Most abductees refuse to be led. When asked intentionally leading questions . . . , they will nearly always reject the suggestion . . ." (p. 291). But if the subject is asked misleading questions about material that is commonly accepted (e.g., "Were the beings bright pink?"), there is an obvious explanation for his rejection of the suggested answer. Further, as I've already indicated, there are instances in which Jacobs seems to successfully lead the subject to "recall" what "really" happened.

In short, Jacobs has not shown the insufficiency of worldly explanations of abduction reports. One should exhaust the plausibility of such explanations before taking a flight of fancy on board otherworldly hypotheses.

Victor Cosculluela is a part-time lecturer in philosophy at Central Connecticut State University.

Cold Fusion and Pathological Science

Cold Fusion: The Scientific Fiasco of the Century. By John R. Huizenga. University of Rochester Press, Rochester, N.Y., 1992. 259 pp. Hardcover, $29.95.

TERENCE M. HINES

Egad! *Another* book about cold fusion? Yes, but *Cold Fusion: The Scientific Fiasco of the Century* is the best one yet. The author, John Huizenga, a nuclear physicist at the University of Rochester, was the co-chair of the United States Department of Energy's Energy Research Advisory Board Cold Fusion Panel. This panel investigated the claims of cold fusion for the federal government in the two months after the now infamous March 23, 1989, press conference at which two University of Utah professors, Martin Fleischmann and Stanley Pons, announced their "discovery." Huizenga's position as co-chair placed him in an excellent situation to write a history of the cold-fusion controversy.

While the book does contain a detailed history of the controversy, it is much more than that. It consists of 13 chapters. The first six are the most historical and recount the events that transpired until the end of May 1989, when the Advisory Board published its preliminary report, just two months after the initial claims of Fleischmann and Pons had been made. (A final report was published in November 1989.) These first chapters also contain discussions of the events leading up to the press conference and previous, equally spurious reports of cold fusion. Among these is the report that Argentina had developed cold fusion in the 1950s. The bulk of the first six chapters, however, deals with the events in the two months following the press conference. It may seem odd that so much space is needed to cover such a brief period, but these were a very active two months in the cold-fusion story.

The next four chapters are more evaluative in nature. They include a discussion of the Advisory Board's report and its publication as well as detailed critiques of the claims made by Fleischmann and Pons and other researchers who claimed to have found evidence for cold fusion. Also noted are the methods used to promote cold-fusion research and to obtain federal money to support further research. These methods were highly unusual, to say the least. Also discussed are the near religious zeal with which many proponents of cold fusion pressed their case, and the degree to which they ignored conflicting evidence.

The final three chapters place the cold-fusion episode in the larger context of pathological science. One especially interesting chapter (Chapter 11) compares the case of polywater with that of cold fusion. Huizenga finds some major similarities in both cases, but one large difference as well: the dispute over cold fusion developed much more rapidly, both in the scientific community and in the public eye, via the media than did the polywater controversy. This was largely due to the use of electronic mail and fax machines to spread information on cold fusion within the scientific community. Of course the dramatic,

and staged, press conference at which the initial claim of cold fusion was made quickly propelled the topic into the media.

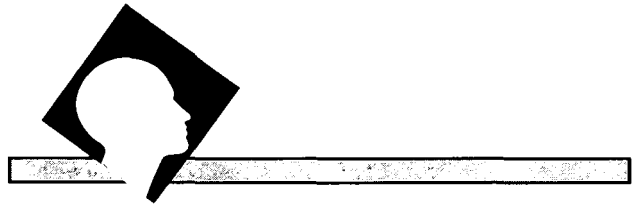
Huizenga's is by the far the best book on cold fusion to date. It provides the reader not only with a clear history of the controversy but with other examples of pathological science for comparison. It is much better organized than Frank Close's *Too Hot to Handle* (which I reviewed in the Winter 1992 SKEPTICAL INQUIRER), although there is some unnecessary repetition. It also contains more technical detail than Close's book. This is necessary, especially in those sections where Huizenga carefully explains where and why investigators who thought they had obtained evidence for cold fusion had gone wrong. He covers not only experimental and statistical errors that led to incorrect claims that cold fusion had been demonstrated, but logical errors as well. These latter were frequently awesome.

Cold Fusion: The Scientific Fiasco of the Century is probably the definitive book on the topic and is a most useful addition to the general literature on pathological science.

Terence M. Hines is professor of psychology at Pace University, Pleasantville, N.Y. For the 1992-93 academic year he is on sabbatical leave at the University of Warsaw and Nencki Institute of Experimental Biology, Warsaw, Poland.

OUT THERE Rob Pudim

New Books



The Book of Magic for Young Magicians, The Secrets of Alkazar. Allan Zola Kronzek. Dover Publications, Inc., 31 East 2nd Street, Mineola, NY 11501. 1992. 121 pp. $4.95 (plus $3 p&h), paperback. Dover republication of clear, basic guide to methods of simple magic tricks, of use to all skeptics. Includes brief sections on misdirection, handling, secrets, presentation, patter, repetition, naturalness, routining, and performance, plus three sections on card tricks.

The Creationists: The Evolution of Scientific Creationism. Ronald L. Numbers. Alfred A. Knopf, Inc., New York. 1992. 458 pp. $27.50, hardcover. Welcome authoritative, even-handed history of creationism, from its roots in the theologies of a century ago to its resurgence since the 1960s. The author, a professor of the history of science and medicine at the University of Wisconsin, concentrates on those creationists who possessed, or claimed to possess, scientific credentials. Numbers is particularly interested in how persons and parties "*used* science" and "pseudoscience" to further their ends. This book has received much praise and has already won an award from the American Society of Church History, which calls it "a superb work of historical scholarship . . . a landmark book."

Darwin: The Life of a Tormented Evolutionist. Adrian Desmond and James Moore. Warner Books, Inc., 1271 Avenue of Americas, New York, NY 10020. 1992. 808 pp. $35.00, hardcover. Comprehensive biography of Darwin and his times, hailed as the definitive work. (Stephen Jay Gould has called it "unquestionably, the finest [biography] ever written about Darwin.)

The Dictionary of Mind and Spirit. Donald Watson. Avon Books, 1350 Avenue of the Americas, New York, NY 10019. 1992. 406 pp. $12.50, paperback. Dictionary of terms related to paranormal phenomena, esoteric religion, modern parapsychology, and spiritual traditions. May have some use for skeptics as a description of claims, although the viewpoint represented is basically that of parapsychologists and spiritualists; little or no effort has been made to include skeptical viewpoints. Entries tend to be from a paragraph to a page or more in length.

For Enquiring Minds: A Cultural Study of Supermarket Tabloids. S. Elizabeth Bird. University of Tennessee Press, Knoxville, Tenn. 1992. 234 pp., paperback. Examines the tabloids from the viewpoint of cultural anthropology and folklore. The author, an assistant professor of humanities and anthropology at the University of Minnesota, tries to understand what tabloids mean to the lives of their readers and argues that they are successful because they build on and feed existing narrative traditions, as folklore does.

The New Sketicism: Inquiry and Reliable Knowledge. Paul Kurtz. Prometheus Books, Buffalo, 1992. 371 pp., $24.95, hardover. A major new

work by one of the world's leading skeptics, enunciates a new kind of skepticism, *skeptical inquiry* An outgrowth of pragmatism, skeptical inquiry differs from, and is a strong critic of, nihilism, mitigated skepticism, and dogmatic skepticism in that it is *positive* and *constructive.* It seeks to transform negative critical analysis of claims to knowledge into positive contributions to growth and development of inquiry. A form of *methodological skepticism,* it is not total, but is limited to the context under inquiry, and therefore does not lead to unbelief, despair, or hopelessness. Skeptical inquiry grows out of something even more important, he argues—the lust for life. Kurtz develops and applies these themes to such areas as the paranormal, religious unbelief, fantasy and illusion, ethical inquiry, and politics. An appendix gives his personal account of the work of the Committee for the Scientific Investigation of Claims of the Paranormal, which Kurtz founded and still heads.

Prophetess of Health: Ellen G. White and the Origins of Seventh-Day Adventist Health Reform. Ronald L. Numbers. University of Tennessee Press, Knoxville, Tenn., 1992. 335 pp. $49.95, hardcover; $19.95, paperback. Enlarged edition of a work first published in 1976, causing quite a stir at the time in the Seventh-Day Adventist movement.

The Struggle to Understand: A History of Human Wonder and Discovery. Herbert C. Corben. Prometheus Books, 700 E. Amherst St., Buffalo, NY 14215. 1992. 370 pp. $29.95, hardcover. A history of scientific discovery and superstition from prehistoric times to the present. Begins with the ancient world's attempts to understand nature through religion and mythology, then traces the evolution of scientific thought (in both West and East, including Muslim contributions) over two millennia, combining the significant discoveries with the false starts, such as astrology and alchemy. Considers the great controversies pitting religion against science and concludes with a tribute to humanity's quest for progress.

When Wish Replaces Thought: Why So Much of What You Believe Is False. Steven Goldberg. Prometheus Books, 700 East Amherst Street, Buffalo, NY 14215. 1992. 216 pp. $26.95, hardcover. Important, provocative, tightly argued work addresses empirical questions that are capable of eliciting the strongest of emotions and a substitution of wish for thought. "I believe that . . . fallacious arguments, presented as explanations, infuse social science today and are responsible for millions of people accepting explanations of the world that have no logical consistency [and] are discordant with the empirical evidence." Goldberg, chairman of the Department of Sociology at City College, City University of New York, proceeds to examine the logical and empirical inadequacies of explanations offered. He urges elimination of ideological bias from classroom teaching. He argues that concerns over the use to which information about emotionally charged issues might be put is a separate issue from whether the assertions have been empirically validated and in no way should interfere with the pursuit of truth. Subjects examined include the death penalty, homosexuality, patriarchy, black athletic superiority, SAT scores, astrology, "feminist" science, Freudian theory, abortion, and sociology itself.

—*Kendrick Frazier*

Articles Of Note

Anderson, Chris. "Physicist Running for President Is Accused of Distorting Science to Fit Guru's Ideas." *Nature*, 359:97, September 10, 1992. Good news story about the presidential candidacy of physicist John Hagelin of Maharishi International University under the banner of the Natural Law Party. Quotes several scientists concerned about Hagelin's mixing of TM, science, and politics.

"Are Chemists Girl Crazy?" *Science*, July 10, 1992, pp. 158-159. Amusing report on a belief among many chemists that chemists produce more girl babies than boy babies. *Science* went after the data, first via a questionnaire completed by about 250 chemists. Result: 51.5 percent of offspring were girls. A random sampling of 10 percent of 1,400 listings of chemists in the *Who's Who in Frontiers of Science* database showed "a slight and insignificant preponderance (51.5%) of boys." Apparent verdict about the belief: "myth."

Bondi, Hermann. "The Philosopher for Science." *Nature*, July 30, 1992, p. 368. A 90th-birthday tribute to philosopher of science Karl Popper, "whose seminal work . . . is still the basis of how we think about our subject, is still the touchstone of whether one's ideas are scientifically meaningful or just a jumble of ingenious and perhaps satisfying thoughts."

Byrnes, Gail, and I. W. Kelly. "Crisis Calls and Lunar Cycles: A Twenty-Year Review." *Psychology Reports*, 71:779-785, 1992. Review of 12 studies that have examined the relationships between crisis calls to police stations, poison centers, and crisis-intervention centers and synodic lunar cycle. Concludes that there is "no good foundation for the belief that lunar phase is related to the frequency of crisis calls. In addition there is no evidence whatsoever for the contention that calls of a more emotional or 'out-of-control' nature occur more often at the full moon."

Coon, Deborah J. "Testing the Limits of Sense and Science: American Experimental Psychologists Combat Spiritualism, 1880-1920." *American Psychologist*. February 1992, pp. 143-151. In the late nineteenth century the fad of spiritualism met the new science of psychology, with mixed results. Some scientists, like William James, embraced both fields. Others investigated psychic phenomena in order to debunk the mediums and promote the new science.

"Darwin's Detractors." *Nature*, August 27, 1992, p. 698. Brief editorial noting the inevitability of books "intended to demonstrate to those who already believe evolution to be false that their prejudices are correct" but lambasting newspapers that publicize such books uncritically as though this is a debate within science. "Why serious newspapers do this kind of thing is beyond belief." Such newspaper coverage "is not a service but a disservice to readers."

Davis, Edward B. "A Whale of a Tale: Fundamentalist Fish Stories." *Perspec-*

tives on Science and Christian Faith, December 1991, pp. 224-237. For a hundred years some Christians have "proved" the possibility of the Jonah story by citing James Bartley, a British sailor who survived three days inside a whale. Davis traces the Bartley legend to its roots and concludes that it is "no more than a fish story, albeit a dandy." He also examines the methods of a popularizer of the tale, Harry Rimmer, a 1920s preacher and practitioner of "folk science."

Fischbach, Gerald D. "Mind and Brain." *Scientific American*, September 1992, pp. 48-57. Introduction to a special issue on Mind and Brain. Eleven articles deal with broad aspects of the subject, including the final article by Francis Crick and Christof Koch, "The Problem of Consciousness."

French, Christopher C. "Factors Underlying Belief in the Paranormal: Do Sheep and Goats Think Differently?" *The Psychologist*, July 1992, pp. 295-299. Provides many examples of cognitive biases in human information processing (the "illusion of control," the tendency to seek confirmatory evidence for our beliefs, poor appreciation for the probability of coincidences, etc.) that even if paranormal forces do not exist would lead many people to believe that they do. Whether believers are more prone to such biases "cannot be answered with certainty, but the limited evidence available suggests that this is a real possibility."

Gallup, George, and Frank Newport. "Almost Half of Americans Believe Biblical View of Creation." *Gallup Poll Monthly*. November 1991, pp. 30-34. Forty-seven percent of Americans in a recent poll agreed with a creationist view of human development. Less than 10 percent supported a secular view of evolution. Forty percent maintained that people evolved with God's guidance.

Gorman, James. "Take a Little Deadly Nightshade and You'll Feel Better." *New York Times Magazine*, August 30, 1992, pp. 23-28, 73. Article on homeopathic medicine. It's "in vogue, but are its cures—highly diluted doses of natural substances—based on soggy science?" Gives full play to homeopathic claims and anecdotes by patients, but also seeks critical scientific opinion. The editor of the *New England Journal of Medicine* is quoted regarding a paper much-cited by homeopaths and published by the *British Medical Journal:* It is "a paper that would never pass muster at the *Journal*." Another pro-homeopathy paper published in the *Lancet* was characterized as a "soft outcome" because the symptom evaluations were subjective. He and the editor in chief of the *Harvard Health Letter* say both these published papers leave them extremely skeptical of homeopathic claims.

Gould, Stephen Jay. "Impeaching a Self-appointed Judge." *Scientific American*, July 1992, pp. 118-121. Much-needed authoritatively critical review of Berkeley law professor Phillip E. Johnson's anti-evolution book *Darwin on Trial*. Johnson's work is "a clumsy, repetitious abstract argument with no weighing of evidence, no careful reading of literature on all sides, no full citation of sources (the book does not even contain a bibliography), and occasional use of scientific literature only to score rhetorical points. . . . The book, in short, is full of errors, badly argued, based on false criteria, and abysmally written. . . . Not only does Johnson misconstrue the basic principles of our science . . . , but he also

fails to present cogent arguments in his own brief as well."

Joseph, Joe. "There's One Born Every Minute." *Times Saturday Review*, June 27, 1992, pp. 30-31. A light look at some of England's most popular astrologers, including those who help businesses select employees. The Gauquelin studies are reported as support for astrology.

Koutstaal, Wilma. "Skirting the Abyss: A History of Experimental Explorations of Automatic Writing in Psychology." *Journal of the History of the Behavioral Sciences*, January 1992, pp. 5-27. Automatic writing is a favorite device of some psychics, but it has also been studied by psychologists for almost a hundred years. Koutstaal records the "demystification" of the phenomenon.

Maddox, John. "How to Publish the Unpalatable," *Nature*, July 16, 1992, p. 187. News and Views column wondering how a journal should respond to "politically incorrect" claims—in this case the work of Professor Phillippe Rushton of the University of Western Ontario, who has analyzed the cranial capacity of U.S. Army soldiers to support his views on racial differences in IQ. To avoid misinterpretation and misuse, "the proof should be especially compelling," a test Maddox says Rushton has not met.

Marshall, Eliot. "When Does Intellectual Passion Become Conflict of Interest?" *Science*, July 31, 1992, pp. 620-624. Interesting exploration of "intellectual conflicts of interest" within science, the tendency (and sometimes need) to passionately advocate one's own theses, the "intertwined positive and negative aspects of commitment to one's own hypotheses." Presents three case studies of current controversial claims within science in which "researchers seemed to have an unusual personal investment in their research."

Martin, S. M., I. W. Kelly, and D. H. Saklofske. "Suicide and Lunar Cycles: A Critical Review Over 28 Years." *Psychological Reports 1992*, pp. 787-795. Review of 20 studies that have examined the relations between suicides or suicide threats with the synodic lunar cycle. Most studies indicated no relation between lunar phase and the measures of suicide. The positive findings conflicted, have not been replicated, or were confounded with variables such as season, weekday, weather, or holidays. The authors conclude that "there is insufficient evidence for assuming a relationship between the synodic lunar cycle and completed or attempted suicide."

McCandless, Peter. "Mesmerism and Phrenology in Antebellum Charleston: 'Enough of the Marvellous.' " *Journal of Southern History*, May 1992, pp. 199-230. Charleston, South Carolina, was a scientific and cultural center before the Civil War. New sciences and pseudosciences were hotly debated by the citizens.

O'Neill, Graeme. "Look on My Works, Ye Mighty, and Despair." *Search*, April 1992, pp. 79-81. O'Neill laments the futility of arguing about evolution with Christian fundamentalists or "green fundamentalists." He uses genetics to argue against a planned creation of humanity.

Sarler, Carol. "Talking Tortoises? No FT, No Comment." *Times Saturday Review*, July 20, 1991, p. 12. The *Fortean Times*, for many years a small subscription-only magazine, is hitting the national newsstands in Great

Britain, thanks to a wealthy new publisher. The magazine specializes in the sort of phenomena that Charles Fort wrote about: rains of fish, spontaneous human combustion, alien abductions, etc.

Sarler, Carol. "Dining Out on Designer Deity." *Times Saturday Review*, April 11, 1992, pp. 16-17. Maxine Shenkman, American fashion model, is now Rytasha, who raises funds for the poor of Bangladesh. Critics say that the money is being used to promote her religious views to the villagers, rather than to supply food and medicine.

Tart, Charles T. "Perspectives on Scientism, Religion, and Philosophy Provided by Parapsychology," *Journal of Humanistic Psychology*, Spring 1992, pp. 70-100. Tart argues that certain paranormal phenomena are real and religion and philosophy must come to terms with the fact. He maintains that parapsychology is being opposed not by science but by "scientism," materialistic dogma masquerading as science.

Thomas, Christopher. "The Devil to Pay." *Times Saturday Review*, February 29, 1992, p. 14. Once a year thousands of Hindus, Muslims, and Jains gather at Pushkar for a tantric rite of exorcism. The priests are paid well to chase off ghosts by plunging people into a temple pond.

Thynne, Jane. "Beam Me Up, Cerullo." *The Spectator*, June 20, 1992, pp. 13-14. American evangelist and faith healer Morris Cerullo is about to become, via satellite, Britain's first televangelist.

The compilers of Articles of Note are Kendrick Frazier, Editor of the SKEPTICAL INQUIRER, *and Robert Lopresti, Government Documents Librarian, Wilson Library, Western Washington University, Bellingham, Washington.*

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Follow-Up

Liquefying 'Blood': Thixotropy or Low Melting Point? A Reply to Broch

LUIGI GARLASCHELLI, FRANCO RAMACCINI, and SERGIO DELLA SALA

This note concerns the phenomenon of the liquefying "blood" relic of Saint Januarius (San Gennaro) in Naples. It is a reply to Broch's (1992) piece in the Fall 1992 SKEPTICAL INQUIRER.

Obviously, a wealth of dubious anecdotes and lore have accreted on a phenomenon that is only partially observable and has been referred to as paranormal for six centuries. But in no way can ad hoc "facts," chosen from amid an incredible mass of contradictory material, *prove* anything. It is therefore unfair and wrong to present personal opinions as established truths to readers who may well be skeptical, but not necessarily fully informed, about the topic at issue.

Furthermore, thixotropy aside, the arguments raised by Broch are well known to anyone interested in the phenomenon (e.g., Alfano and Amitrano 1924).

Before the appearance of our report (Garlaschelli, Ramaccini, and Della Sala 1991; see also Frazier 1992), the only rational explanation for the documented behavior of the relic, that is, its changing from solid to liquid during the rite, was the low melting substance hypothesis (Salverte 1826). This hypothesis is lengthily discussed in all popular books (e.g., Broch 1985). Nevertheless Broch tells readers that we ignore the very existence of the low melting hypothesis, ". . . [which] shows a lack of information on the part of the authors and is really funny." According to the low melting hypothesis, the relic consists of a substance that melts at a given room temperature. However, this substance would have a *constant* melting point. As clearly stated in our *Nature* report, the blood-liquefaction ceremony can be performed at very different room temperatures (May, September, December). This and the problem of inducing the change in temperature to produce the "miracle" remain the basic limitations of this hypothesis.

In addition, if anecdotes were to be considered, many could be *chosen* to disprove this hypothesis. For instance: it is reported (Alfano and Amitrano 1924:162) that when soldering work was done on the reliquary, the hand of the priest holding it was burnt while the substance remained a solid.

We proposed thixotropy as an alternative explanation. Thixotropy denotes the property of certain gels to liquefy when stirred or vibrated. Using medieval materials (in nature the basic one is to be found only on active volcanoes, such as Vesuvius, near Naples), we were able to reproduce the main characteristics of the phenomenon. Our concoction has

been replicated by many skeptics (Epstein 1992), each time showing the same characteristics (Anon. 1991). These include the unlimited reversibility, the bubbles, the foam, and even the "globetto" (a solid core lingering inside the liquid part). Broch states that this is not so and passes it on to readers as an established truth (on which basis?).

Thixotropy appears to be a sound explanation for many reasons: it would account for the numerous unexpected liquefactions that have occurred while, for instance, the vial was being repaired (Alfano and Amitrano 1924:85); it would explain why the difference in room temperature was of little consequence; it can be easily brought into effect by the movements performed during the rite just to check the state of the substance; it would remove the *necessity* of implying that conscious cheating has been involved for six centuries, while obviously allowing for its occasional occurrence (at least *we* learned the right moves to keep our substance solid or to induce its liquefaction). The thixotropic hypothesis also has the advantage of being easy to falsify with intentional, controlled shaking. Such a simple experiment has yet to be carried out.

In his dismissal of thixotropy, Broch adds that it is not even new: "This sort of explanation was proposed by various persons. Perhaps the first was Albini." The "various persons" are not referred to. Albini's (1890) work had nothing to do with thixotropy. As a possible rational interpretation of the phenomenon, he proposed the settling of a two-phase mixture into two layers: the upper, lighter one, an insoluble powder, would solidify enough to serve as a sort of plug to stop the heavier, liquid part below from flowing freely in the vial (to get the picture, think of the fat layer on gravy left to stand in the fridge). Albini's attempt presupposes that the liquid in the lower part of the vial would be hidden from view (Albini 1890:26). Admittedly unfamiliar with the relic, he suggested that it may be so. This is not the case. He tried two recipes: one with water, sugar, and cocoa (unknown in Europe before 1519), the other with casein, whey, and salt. His simulation never impressed observers as a convincing imitation of the phenomenon and it left no traces in later works. His report is invariably misquoted from the same erroneous source, as it is clear from the fact that his two separate recipes are mixed up into a single one. Not even the title is ever correct, as "mobility" became "immobility" of viscous, not homogeneous, liquids. Broch too quotes the wrong title and falls into the same trap, as he derives the content from a "nonskeptical" source (Piancastelli 1966), which in turn quotes from another source (Alfano and Amitrano 1924). To conclude: much to our own amazement, thixotropy had never been proposed before our report (nor quoted in reviews), and therefore had not been assessed, as Broch tries to tell readers.

Later on, and quite unaccountably, Broch tries to hide three centuries of documented liquefactions. Between 1389 and 1659 at least 37 independent accounts of the liquefaction were reported (Alfano and Amitrano 1924: 106-135). There is no reason for discarding them, unless perhaps to give Valerius Cordus time to produce sulphuric ether, a basic component of the low melting recipe Broch copied from Larousse's 1866 encyclopedia but traceable back to Salverte (1826). (See Alfano and Amitrano 1924: 172.)

Broch declares "untrue" our quote that the phenomenon was still regarded as unexplained, even in the

wake of "well publicized" (Broch 1992) papers, such as Broch (1981) in the *Patriote-Côte d'Azur* and Broch's interview in *Nice-Matin* (Benedetti 1988) reporting Broch's recipe. Our quote, from the *Encyclopaedia Britannica*, was chosen to represent what to our mind is the general rational opinion.

For the sake of brevity and because of its irrelevance we shall not go into a detailed confutation of the anecdotal evidence Broch reported. It is very marginal to the topic, insofar as the argument here is whether there could have been any conscious trickery, and this would not exclude thixotropy. It would suffice to say that the "Miracle Performed Under Threat" anecdote, usually quoted from Dumas (1851, vol. 1, chap. 22) is vividly contradicted by Dumas himself just a few pages earlier (1851, vol. 1, chap. 21). Furthermore, like most anecdotes, it has been attributed to different persons at different times.

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Getting a Lift from Nature

Nature will give you a lift only if you are going her way and any bias, whether rooted in psychological need or political leaning, that detours the journey will take one away from truth.

—Steven Goldberg, *When Wish Replaces Thought: Why So Much of What You Believe Is False* (Prometheus Books, Buffalo, N.Y. 1992), p. 17.

Forum

Our 'Spooky Presidential Coincidences Contest' Winners

Two co-winners have been declared in our "Spooky Presidential Coincidences Contest." They are Arturo V. Magidin, of Mexico City, Mexico, and Chris Fishel, of Charlottesville, Virginia. You'll recall (Forum, Spring 1992) that John Leavy and a bunch of his computer colleagues in Austin, Texas, became upset when Ann Landers reprinted "for the zillionth time" a list of chilling parallels between the assassinations of John F. Kennedy and Abraham Lincoln. Much is often made of this, as though some kind of historical synchronicity, rather than coincidence, is at work. They decided to show how easy it'd be to find similar amazing coincidences between other pairs of presidents, William McKinley and James Garfield, for instance. They presented three pages of examples and challenged readers to come up with their own. We agreed, but told Leavy and his friends, who started it all, that they would have to be the judges.

We received dozens of entries. We also stimulated considerable media interest. At least two newspapers did stories, *Omni* magazine called, and a number of radio stations pursued interviews. The contest seemed to catch the fancy of many people.

"I've gotten my 15 minutes of fame," says Leavy. He and his old University of Texas buddies got together over pizza to judge the entries. "Dozens of radio stations have interviewed me, and I've tried to give your magazine a plug each time. It's been fun," he says.

Arturo Magidin is a student at the Universidad Nacional Autónoma de Mexico, in Mexico City, where he is about to receive a B.Sc. in mathematics. Here is his entry, including his introductory comments:

> I read with delight John Leavy's "Our Spooky Presidential Coincidences Contest."
>
> I would like to point out, however, that spooky coincidences are not limited to one country or place. To prove this, I wish to enter the contest with the following list of 16 spooky coincidences between the lives and deaths of U.S. President John F. Kennedy and Mexican President Alvaro Obregón:
>
> 1. "Kennedy" and "Obregón" have seven letters each.
> 2. Both Kennedy and Obregón were assassinated.
> 3. Both their assassins had three names (Lee Harvey Oswald and José de León Toral).
> 4. Each of the assassins died shortly after killing the president.
> 5. Kennedy was assassinated on the way to a luncheon. Obregón was assassinated leaving a luncheon.
> 6. Kennedy and Obregón were both married in years ending with the number 3.
> 7. Kennedy and Obregón both were in their forties when they were killed.
> 8. Both were in the Army during a major military conflict (Ken-

nedy in World War II, Obregón during the Mexican Revolution).

9. Kennedy and Obregón each had a son who died soon after birth.

10. Kennedy and Obregón each came from a large family.

11. Kennedy had three brothers. Obregón had three sisters.

12. A foreign government refused to recognize Obregón's regime. Kennedy's regime refused to recognize a foreign government. (In Obregón's case, the U.S.; in Kennedy's, Cuba. Amazingly enough, the U.S. government was involved in both cases!)

13. Obregón never lost a major battle. Kennedy never lost a major election.

14. Kennedy and Obregón each had serious injuries during his military career.

15. Obregón died after his second presidential election and before taking office. Kennedy died before his second presidential election and after taking office.

16, Obregón and Kennedy were both concerned with civil rights and social reform.

Coincidence? You decide.

A. Magidin
Mexico City, Mexico

A comment. Before you say, "But Obregón wasn't a U.S. president," recall that we didn't specify that the presidents need be. Frankly, it never occurred to us at the time that we'd get entries involving presidents from outside the United States, but why not? In fact, this point provides an interesting lesson in "coincidence seeking." If the domain from which the entities are selected is not narrowly defined in advance, amazing-sounding coincidences are even easier to find. The fact that this particular set of coincidences also happens to involve John F. Kennedy makes it even better.

Co-winner Chris Fishel, a graduate student in chemical engineering at the University of Virginia, managed to come up with lists of coincidences between no fewer than 21 different pairs of U.S. presidents. None involved fewer than six coincidences. As a result, he says, "After discovering that lists of coincidences can be devised for pairings as unlikely as Teddy Roosevelt and Millard Fillmore, I think a really challenging contest would be finding a pair of presidents with fewer than five coincidences between them. Keep up the good work in promoting critical thinking."

Here are several of Fishel's listings:

Thomas Jefferson and Andrew Jackson

1. Jefferson lost to John Adams in 1796 but defeated him in 1800; Jackson lost to John Quincy Adams in 1824 but defeated him in 1828.

2. Both were involved in elections decided by the House of Representatives (Jefferson in 1800; Jackson in 1824).

3. Both their predecessors refused to attend their inaugurations.

4. Both served two full terms.

5. Each replaced his original vice-president for his re-election campaign.

6. Both of their second vice-presidents (Clinton, Van Buren) had served as governors of New York.

7. Crowds at Jefferson's second inauguration and Jackson's first inauguration caused considerable damage to the White House.

8. Both their wives died before they became president.

9. Both their wives had 6-letter first names (Martha Jefferson, Rachel Jackson).

10. Both were in debt at the time of their deaths.

11. Each had 6-letter first names.

12. Each had last names that start with "J" and end in "son."

13. Each had a state capital named after him.

Dwight David Eisenhower and George Bush

1. Both have 6-letter first names.
2. Eisenhower was born in Texas and moved to the North; Bush was born in the North and moved to Texas.
3. Both won the nomination by defeating a Midwestern senator named Robert with a 4-letter last name (Robert Taft of Ohio; Robert Dole of Kansas).
4. Each was a moderate Republican who placated the party's right wing by naming a young conservative senator as his running mate.
5. Both had controversial chiefs of staff (Sherman Adams, John Sununu).
6. Both had cabinet nominees rejected by the Senate (Lewis Strauss, John Tower).
7. Both suffered heart problems during their first term.
8. Both had speaking styles that were not known for their clarity (to put it euphemistically).

Millard Fillmore and Theodore Roosevelt

1. Both were born in and died in New York.
2. Both were vice-presidents who took office following the death of the president.
3. Both were married, widowed, and remarried.
4. Both their first wives had first names that began with "A" (Abigail Fillmore, Alice Roosevelt).
5. Four years after leaving office, each ran for president on a third-party ticket.
6. Both of their third-party candidacies won over 20 percent of the vote.
7. Both their third-parties were better remembered by their nicknames than by their official names. (Fillmore ran with the "Know Nothing" American Party; Roosevelt with the "Bull Moose" Progressives.)

Woodrow Wilson and Ronald Reagan

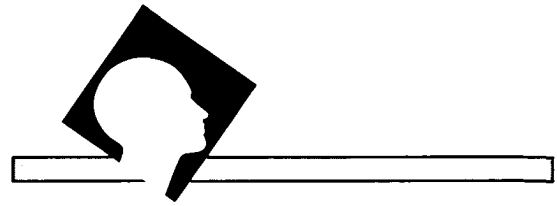
1. Both were governors of states that they weren't born in. (Wilson was born in Virginia and governed New Jersey; Reagan was born in Illinois and governed California.)
2. Both were married twice.
3. Their second wives had 5-letter first names (Edith Wilson, Nancy Reagan).
4. Their second wives were controversial because of their influence on presidential decisions.
5. Both defeated incumbent presidents (Taft, Carter).
6. Both served two full terms.
7. Both involved the U.S. in undeclared wars in Latin America (Wilson in Mexico, Reagan in Grenada).
8. Both made historic firsts with their Supreme Court appointments. (Wilson appointed Louis Brandeis, the first Jewish justice; Reagan appointed Sandra Day O'Connor, the first female justice.)
9. Both suffered health problems in office.
10. Both have 6-letter last names.
11. Reagan's middle name is Wilson.
12. Special hidden coincidence: Wilson's actual first name was Thomas; thus, both Wilson and Reagan have 6-letter first names.

Magidin and Fishel have each been sent the contest-winner prize, a signed copy of the latest anthology of SKEPTICAL INQUIRER articles, *The Hundredth Monkey and Other Paradigms of the Paranormal* (Prometheus, 1991).

It has been fun, and instructive too, I hope. Thanks to all the readers who submitted entries and other comments.

—Kendrick Frazier, Editor

Letters to the Editor



The scientist's skepticism

I very much enjoyed Mario Bunge's article "The Scientist's Skepticism" (*SI*, Summer 1992). I must contest, however, one of his Five Commandments, or "philosophical requirements," that a scientific theory must satisfy. In particular, his second requirement, "(*b*) *realism:* the world exists independently of those who study it . . . ," is simply wrong. The theory of quantum mechanics does not satisfy this requirement, as was first indicated in the famous Einstein, Podolsky, Rosen paradox and further elaborated on by Bell and others. The assumption of local realism contradicts the predictions of quantum mechanics and the outcome of experiments designed to test whether nature obeys the Bell inequalities. Even more striking—Greenberger, Horne, and Zeilinger have recently shown that in a three-particle system the assumption of local realism not only leads to the violation of somewhat subtle inequalities, but in fact yields a direct and outright logical contradiction within the framework of quantum mechanics.

The conclusion is then that the assumption of realism and the theory of quantum mechanics are mutually incompatible. Since quantum mechanics is experimentally verified with such incredible precision, it cannot be doubted in its present form and within its present realm of application. Hence we are forced to reject the postulate of realism as wrong—no matter how contrary to our common sense this may seem. History has shown again and again that common sense is not a reliable guide when it comes to scientific inquiry—if it were, we might still take the earth to be flat. The world does *not* exist independently of those who study it: a photon flying through empty space does not have particular values of polarization until those values are measured by an observer. This is what quantum mechanics predicts; this is what experiment has verified. Philosophy has no voice in the matter. The measurement process is always hopelessly entangled with that to be measured—the studiers will always alter that which they study. Apparently, nature can supply us with enough weirdness on her own without help from the creative imaginations of paranormalists.

There is a danger in applying philosophical requirements to test the worth of physical theories. We risk mistakes like the old one philosophers made: proving that there must be exactly seven planets in our solar system by the application of seemingly obvious but nevertheless incorrect constraints. What I hope this object lesson shows is that—while sometimes useful as a guide on the poorly marked trail to scientific truth—philosophy cannot be trusted. Our only true guardian angel is the scientific method. With its regular and repeated appeal to experiment, it can always be counted on to be there at our side when we stumble in the dark while on our search for that which we cannot even yet conceive.

Jonathan P. Dowling
Weapons Sciences Directorate
U.S. Army Missile Command
Redstone Arsenal, Ala.

If Mario Bunge regards experiments challenging his beliefs as too expensive, he might consider the valuable time we can spend on linguistic critiques of metaphysical dogma. Physicists in particular are apt to see ambiguity in his

declaration of materialism. We will have plenty of time for such questions if laboratories are replaced with monasteries. A turn in the direction of medieval epistemology does not seem profitable.

Bunge offers a treatment for the "sharp decline of modern civilization." History does not evidence the power of ideology to diagnose or treat civilization's ills. It does evidence that materialism is no remedy for dogmatism's destructive intolerance.

Thomas Himes
Newark, Del.

Oh, Mario Bunge!

What a clear distinction you draw *between scientific (methodological)* skepticism and radical (systematic) skepticism. Another name for the latter might be dogmatic skepticism—a skepticism that invalidates itself as a scientific tool by reserving some areas of intellectual inquiry from its own operations, areas in which dogma reigns unassailed.

Having shown that radical skepticism is logically untenable, you then assert that "every methodological skeptic has some creed or other, however provisional it may be." This seems both reassuring and plausible—after all, we scientists are all reasonable as well as rational, aren't we?

Unfortunately, you then proceed to lay down a set of "certain philosophical requirements" that scientific skeptics presuppose "in every case." Unless you are claiming to know all scientific skeptics and their personal creeds, which I'm sure you are not, this sounds like an attempt to define the term *scientific skeptic* in terms of these requirements.

Some of your requirements are both rational and reasonable, but the first seems to me and to many practicing scientists and skeptics to be neither necessary nor reasonable; it is certainly far from universal among scientists of my acquaintance. There is no reason a believer in any of a number of religions (including Christianity)—who could not give assent to your proposition of exclusive materialism without unduly stretching the customary meaning of "material" or limiting the customary meaning of "universe"—cannot be a scientific skeptic. . . .

To find common ground we have to adopt a truly skeptical but not dogmatic approach to all matters that are decidable by the methods of intellectual logic—the realms of the soul or, perhaps we might say, of humanity. To say that the scientific method is relatively powerless in these realms is one thing; to say that therefore they do not exist is an unwarranted extension. The individual is free to ignore them and may have to do so in the context of scientific work, but to set up a philosophical system on the basis of a negative assertion that the system itself cannot justify smacks of intellectual arrogance—hubris.

Stephen Cradock
Fair Oaks, Calif.

Not only is Bunge's thinly veiled attack on neoclassical economists misplaced, it is totally inaccurate. He suggests that serious economists do empirical research and that neoclassical economists repeat "dogmas that either are untestable or have failed rigorous tests." It thereby implies: All serious economists are people who do empirical testing; No neoclassical economists are people who do empirical testing; therefore, No neoclassical economists are serious economists. While the form is valid, the premises are false.

First, there are many theoretical economists who never do empirical research yet are quite serious and make significant contributions to economic knowledge. Second, neoclassical economists are as empirically oriented as any other group of economists. To my knowledge, only neoaustrian economists have rejected modern empiricism as helpful in discovering economic truth. Even here, however, their objections are based upon consistent analysis and unsettled methodological problems, so they must certainly be classified as serious economists.

The major problem throughout the article is that it considers the product of empirical research to be definitive. In fact, very few empirical studies prove crucial in scientific debate. Rather, "truth" is defined from an accumulation of evidence over time, and even then the evidence is rarely conclusive. It is subject to different interpretations, plagued with theoretical and methodological problems, and often cannot be replicated—especially in the social sciences. It is not empirical research that makes one a scientist—all pseudoscientists claim empirical evidence to support their beliefs. Rather, it is the method of analysis and the acceptance of the scientific criteria for evaluating that analysis that makes one a scientist. On these grounds, neoclassical economists compare favorably with any social scientists.

Lewis Freiberg
Professor of Economics
Northeastern Illinois Univ.
Chicago, Ill.

Theory and empirical testing exist in all social and natural sciences, and I am puzzled that Mario Bunge chose to attack economics and political science. The rational person of economics is not selfish, but merely purposive and goal-directed. All social sciences assume goal-directed behavior, and economics emphasizes a mathematical form of that concept.

Economists do not usually study psychology or sociology, but they assume that preferences affect behavior. Surely that is not controversial.

It is unclear what Bunge means by neoclassical economics, or why he is so upset about it. If the predictions of microeconomics were commonly wrong, then the criticism would be appropriate; but neither are the assumptions questionable nor are the methods of analysis wrong, and the predictions are tested constantly in journals and in public policy.

In macroeconomics, the neoclassical model and others compete vigorously because insufficient data exist to determine the best model. Still, economists are called upon by government and society to design policies, despite the fact that it would be nice to wait for more data, i.e., for many years to pass. Under the circumstances, theory must play a large role.

Economists' policies are often altered to suit the political arrangements favored by decision makers. Some people blame economists for this, but a tax increase cannot be passed, nor an economy freed from governmental inefficiency, merely by wishing. The effects of change or status quo can be predicted by economics in either case.

J. S. Butler
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Vanderbilt University
Nashville, Tenn.

Mario Bunge replies:

Dowling disputes my claim that science is realist, and holds that quantum mechanics is not. He does this because he admits the usual if misleading conflation of realism with locality and classicism. Quantum mechanics is certainly nonclassical and nonlocal. For example, it does not assign a precise position and shape to every physical object, and it does not admit that every interaction decays with distance. However, the theory does retain the philosophical postulate of realism, i.e., the assumption that there are things (such as stars, birds, and one's friends and readers) that exist independently of any observer. Were it not so, the theory would be unable to calculate anything concerning, say, the thermonuclear reactions that occur in the interior of the sun. For details on quantum mechanics and realism, see my books Foundations of Physics *(1967) and* Philosophy of Physics *(1973).*

Cradock and Himes reject my claim that science is materialist and that a full-blooded methdological skeptic should be a materialist. But they offer no reasons for their view. Here is one for mine: If we accept a priori

the possibility of the existence of immaterial entities, such as disembodied souls, we shall be predisposed to give parapsychology the benefit of the doubt and shall invest time and money in chasing ghosts. Likewise with regard to any other fantasies concerning the ghostly, such as morphogenetic fields, collective memories, manifest destinies, angels, and demons. Scientists do not invoke such entities. They have neither the energy nor the time to test every speculative conjecture. They must select the hypotheses to be tested, and one of the selection criteria is precisely the materialism condition. But of course the materialism in question must be modern, not ancient, and it must evolve along with science. For instance, contemporary materialists include electromagnetic fields, living beings, and social systems in the collection of material entities. (In general, philosophy and science should interact, check, and renew one another.) For details on a nondogmatic, nonmechanistic, and nondialectical materialism compatible with contemporary science and mathematics, see my books The Furniture of the World *(1977),* A World of Systems *(1979), and* Scientific Materialism *(1981).*

Freiberg and Butler defend mainstream (neoclassical) economics, which I regard as pseudoscientific for the following reasons. First, a key concept of the theory, namely, that of (subjective) utility, is not mathematically well defined. In fact, the conditions it is supposed to satisfy (positive slope and negative acceleration) define an infinite family of functions. Second, first Herbert Simon and Maurice Allais, and subsequently Daniel Kahneman, Amos Tversky, and other experimental psychologists, have refuted the neoclassical dogma that people always attempt to maximize their expected utilities. Third, mainstream economics makes no room for disequilibria like unemployment, much less for unemployment combined with inflation. Fourth, the theory has been unable to predict any of the major booms and slumps—such as the 1929, 1981, and 1990 recessions. Fifth, contrary to the view of Smith, Mill, Marx, Robinson, and even Hayek—according to whom no social issue is purely economic—mainstream economics pays no attention to the adjoining social sciences. Is not such isolation typical of pseudoscience? Sixth, Milton Friedman himself, in an article suggestively titled "Old Wine in New Bottles," published in the centennial issue of the Economic Journal *(1991), bragged that mainstream economics has not changed essentially over the past century, as if this were proof of its eternal truth. Is not such stasis typical of pseudoscience? What would we say of a stagnant physics, chemistry, biology, or psychology but that it has fossilized into dogma? For details, see the criticisms of G. A. Akerlof, J. Blatt, A. S. Eichner, A. Etzioni, J. K. Galbraith, R. Heilbroner, J. M. Keynes, W. Leontief, J. Robinson, R. M. Solow, L. Thurow, or my own in my* Treatise on Basic Philosophy, *Vol. 7, Part 2 (1985).*

Pick our shots on paranormal

"All of the collective best efforts of all the world's scientists and engineers," writes James Lett ("The Persistent Popularity of the Paranormal," Summer 1992), "are not likely to appreciably diminish the level of paranormal belief."

Lett discusses the emotional attractiveness of supernatural beliefs, then remarks, "I rarely succeed in persuading students that the evidence doesn't support their belief in life after death."

I agree that most people have a powerful emotional need for fringe and supernatural beliefs. This implies that if we skeptics successfully debunk one such belief, it will only be replaced by another.

Accordingly, we should pick our shots. Recognizing that we cannot efface such beliefs entirely, we should instead attack the harmful ones and leave the harmless ones alone.

Let people go on believing in a life after death in which they will be rewarded for being nice to other people. Better that than their believing they can establish some kind of Marxian heaven on Earth if only they kill enough of their fellow men!

Taras Wolansky
Jersey City, N.J.

James Lett's "The Persistent Popularity of the Paranormal" was excellent.

One statement, however, needs qualification: "Anthropologists have documented . . . that religion is a cultural universal." This may be true today, but probably was not true a hundred years ago. Many eighteenth- and nineteenth-century societies possessed no vestiges of religion whatever. See Buchner, *Force and Matter* (Eckler, 1918); Lubbock, *The Origin of Civilization and the Primitive Condition of Man* (Longman's, Green, 1870): Marks, *Three Men of the Beagle* (Knopf, 1991).

John George
Professor of Political Science
and Sociology
Univ. of Central Oklahoma
Edmond, Okla.

James Lett replies:

Wolansky argues that skeptics should attack "harmful" paranormal beliefs and leave "harmless" ones (such as the belief in life after death) alone. In the first place, I do not at all agree that the belief in life after death is harmless; but more important, I do not agree that we should make value judgments about which irrational beliefs merit rational critique. I am convinced that irrational thinking is always harmful and dangerous and that all irrational claims deserve and even demand rational response.

George's assertion that religion is not *a cultural universal is as puzzling as his use of outdated sources to substantiate his contention. He is apparently unfamiliar with systematic cross-cultural research. If he would consult the Human Relations Area Files, however, he could quickly confirm that religion is a cultural universal and that all reliable ethnographic and archaeological evidence indicates that it has been for at least the past 35,000 years or so.*

Confirming the nonfalsifiable

In his review of Gray's *Thinking Critically About New Age Ideas* (*SI*, Summer 1992), Mark Durm quotes Gray as stating: "If no observations can refute a statement, no observations can confirm it either." This is wrong. Consider the following statement: "Some UFOs are vehicles from other planets controlled by intelligent beings." It is certainly true that no observation can refute this statement. No matter how many UFO reports or sightings are traced to nonextraterrestrial forces; it will always be possible that at least one unexplained report could be the result of an extraterrestrial craft. Thus the statement is nonfalsifiable. However, if the statement were true, which I think extremely unlikely, it could be very easily confirmed. All that would be needed would be for a UFO to land on the proverbial White House lawn and for the commander to step out.

It is important to realize that nonfalsifiable statements are only that—nonfalsifiable. If the hypothesis the statement is supporting happens to be true, the hypothesis and the statement can in principle be confirmed.

Terence Hines
Warsaw, Poland

'Psychic illusions'

Susan Blackmore is probably right about psychic experiences being subjectively real but generated by our neurological wiring rather than by any directly corresponding outer events ("Psychic Experiences: Psychic Illusions," *SI*, Summer 1992). Indeed, my own operating assumption is that the universal and unsolvable philosophical problems—whether life has meaning or whether God can be proved to exist, and so on—are likewise "psychic illusions," formed by our brains but relatively or totally meaningless vis-à-vis external reality. And this gives hope that we may free at least our descendants not only from the burden of superstition, but as well from the morass of philosophy.

David C. Morrow
Corpus Christi, Tex.

Tips on self-help books

Eileen Gambrill's article on self-help books (*SI*, Summer 1992) provided a detailed checklist of consumer questions, but may I suggest a simpler test? First, get the book at the library to avoid spending money on possible baloney. Second, analyze the advice given with your reason and intuition. Does it make sense? Do you like it? Does it look as though it might resolve your problem? If the answers are yes, follow the advice and see if it works. Any book that helps you successfully and appropriately resolve a problem is a good self-help book, regardless of specific methodology. This is true for any type of problem you are facing—including those involving "self change."

Phil McWilliams
Silverado, Calif.

Also a fortune teller (once)

I came down with a bad case of déjà vu when I read "James Michener's Tales of a Fortune Teller" (*SI*, Summer 1992). I, too, was once a fortune teller, and I do mean *once.*

It was a PTA annual fair to raise money for the elementary school. We had various booths, with food, penny-pitching, darts, and balloons, the usual amateur things. I volunteered to be the Gypsy Fortune Teller. I dressed the part in babushka and wig, and with a tooth blacked out in front. I set up shop in a tent made of a sheet, with an upside-down fishbowl for a crystal ball.

I told what I thought were funny fortunes, and they all went like this: "You will go to the dentist within the next year and he will find a cavity." "You will get a postcard from a distant place, and it will say, 'Having a wonderful time, wish you were here.' " "You will be searching for something, look under your bed, and find dust bunnies."

My friends, who recognized me, came out of my tent laughing. But evidently there were others who didn't laugh and didn't recognize me. The school principal called me a couple of weeks later and said, "You won't believe this, but I've had 10 or 20 calls wanting to know who you were and your home phone number. It's all over town that your fortunes are coming true. These people want to consult with you."

I am still appalled, 20 years later.

Kaa Byington
San Francisco, Calif.

Reply to 'Mars effect' critics

This is a reply to two letters (*SI*, Summer 1992) criticizing my "Update on the 'Mars effect' " (Winter 1992).

David J. Simmons says that my assessment of eminence was subjective and liable to biases. I assessed eminence of an athlete after searching for his or her name in 21 reference books. The range of theoretical hits is 0 to 21. The more hits, the greater the eminence. Where is the bias?

Simmons also suggests studying 10,000 babies for 10 years. Who will fund such an expensive project? Moreover, is it necessary at all? Why not take historical people whose life records are already at hand?

Stephen D. Christman's tentative explanation of the Mars effect requires (1) that the position of Mars in the sky bear a systematic relationship with the time of the year and (2) that the athletes' Mars effect be built upon this relationship. I studied these questions recently, as the same point had been raised by Dutch critics at the EuroSkeptics 1991 conference in Amsterdam. I found that Christman's conjecture 1 is true, but conjecture 2 is not: peaks and troughs in the seasonal curve of athletes' births would suppress, not raise, a Mars effect. More on this controversy in the forthcoming EuroSkeptics Proceedings (*Skeptiker*).

Suitbert Ertel
Institut for Psychologie
University of Göttingen
Göttingen, Germany

Frequency theory in statistics

The probability problems posed by Martin Gardner (*SI*, Winter 1992) were correctly solved by him. A textbook on probability theory will confirm that the solutions are special cases of elementary mathematical theorems. If, however, the solutions are interpreted empirically rather than as exercises in pure mathematics, then a statement that appears to be about a single particular event can be construed instead as a prediction of the relative frequency with which the event would occur in a large number of repetitions. This circumvents the objections of Mario Bunge and Frederick Gilkey (Letters, Summer 1992).

Advocates of the frequency theory of applied probability maintain that any statement about the probability of a single event is acceptable only if it is interpreted as I have just indicated. But they, as well as Bunge and Gilkey, face a difficulty that can be brought out through another story about a prisoner.

The warden, who makes his own rules, tells the prisoner that he will be executed quickly and painlessly if he draws a white ball from a box, but will be burned alive if he draws a red ball. He is to choose one of two boxes and then draw the single ball it contains. The boxes are clearly labeled "A" and "B." The ball in box A was drawn at random from another box containing one white ball and 999 red ones, and the prisoner knows this. He also knows that the ball in B was similarly chosen from among 999 white balls and one red one. Assume that he is not a masochist and that if he is uncooperative, i.e., refuses to follow the stated procedure, he will be burned. (I include these provisos in the hope, though not the expectation, that they will forestall quibbling.) Which box would you advise him to choose?

Note that after the two balls have been selected and placed in boxes A and B, each has a definite color and chance plays no further role unless the prisoner himself introduces it, e.g., by flipping a coin to reach his decision. It is, or should be, clear that it is not in his interest to do this and that his only reasonable decision is to select box B. Regardless of the result, this is the last decision he will ever make; to him, the hypothetical relative frequencies that would occur in many repetitions are irrelevant. He can, of course, avoid use of the word *probability*, but the concept is still there.

David A. Shotwell
Alpine, Tex.

Courses teaching critical thinking

Michael Wirth ("Way of Science," *SI*, Summer 1991) and I are forming a collection of syllabi of courses teaching critical thought, both those devoted entirely to critical thinking and those incorporating significant amounts of critical thought into the more usual material of a discipline. We intend to include a broad range of disciplines and high school and even elementary school materials as well as university courses. Obviously, to be generally useful, such syllabi should rely on generally available teaching materials and specifically outline the instructional content. We hope the best and most broadly applicable can be published to provide models and inspiration for teachers. All contributors will retain editorial and copyright control over their own materials. Will you help? Please send your syllabi, or information about other people's courses that we might solicit for inclusion, to: David MacDonald, History Department, Illinois State University, Normal, IL 61761.

David MacDonald
Normal, Ill.

Witnessing and depersonalization

Unlike the learned researcher who studies meditators and the big-city journalist who digests the researcher's

results for *SI*'s readership, I have experienced both depersonalization and "witnessing" ("Out-of-Body Feeling Common, Persistent in Meditators," *SI*, Fall 1991). While I have never had an out-of-body experience (OBE), I have read descriptions of classic OBEs, and unlike *SI*'s headline writer, I know an OBE is a laughably inappropriate term to describe witnessing, whatever editorial purpose may be served by an attempt to associate Transcendental Meditation (TM) with the sensationally incredible.

Many years ago, prior to practicing TM, I underwent a period of extreme emotional stress during which I experienced the state described by S. J. Blackmore in a letter in the Spring 1992 issue of *SI*. The depersonalization or derealization experiences I had (confirmed by a therapist) were frightening, disorienting, and extremely unpleasant, characterized by a sense of fragmentation and alienation. In radical contrast, the witnessing experience is subjectively one of great stability, enhanced integration, and a more immediate, intimate, and efficient connection with the world—a heightened sense of reality and involvement rather than one of unreality, lack of significance, or vagueness.

In the witnessing state, nothing is lost of the ordinary experience of being resident in one's body; rather, the *context* of that experience changes. The change in context might be described as a feeling of observing oneself, but the observation does not take place from a perspective outside the body. Instead, the "observation" (which is really too active a term for this situation) is simply not localized in any way; the term *inside* or *outside* does not apply.

The witnessing state is impossible to describe precisely, which is why there is such confusion over what it entails among those who have not experienced it. That to characterize witnessing one might use language that has some similarity with the language used to characterize depersonalization or OBEs does not mean the states themselves are equivalent. . . .

It is a mistake, although a tempting one (especially to those anxious to discredit TM), to conclude that because OBEs and depersonalization share with witnessing certain elements of their verbal descriptions, these pathological states can therefore "account for the 'higher state of consciousness' . . . felt by some TMers."

Judith Stein
New York, N.Y.

The letters column is a forum for views on matters raised in previous issues. Brief letters (less than 250 words) are welcome. We reserve the right to edit longer ones. They should be typed double-spaced. Due to the volume of letters, not all can be published. Address them to Letters to the Editor, SKEPTICAL INQUIRER, 3025 Palo Alto Dr. NE, Albuquerque, NM 87111.

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The organizations listed below have aims similar to those of CSICOP but are independent and autonomous. They are not affiliated with CSICOP, and representatives of these organizations cannot speak on behalf of CSICOP.

UNITED STATES

ALABAMA. **Alabama Skeptics,** Emory Kimbrough, 3550 Watermelon Road, Apt. 28A, Northport, AL 35476 (205-759-2624).

ARIZONA. **Tucson Skeptical Society** (TUSKS), James McGaha, Chairman, 5655 E. River Rd., Suite #101-127, Tucson, AZ 85715. **Phoenix Skeptics,** Michael Stackpole, Chairman, P.O. Box 60333, Phoenix, AZ 85028.

CALIFORNIA. **Bay Area Skeptics,** Wilma Russell, Secretary, 17723 Buti Park Court, Castro Valley, CA 94546. **East Bay Skeptics Society,** Daniel Sabsay, President, P.O. Box 20989, Oakland, CA 94620 (415-420-0702). **Sacramento Skeptics Society,** Terry Sandbek, 3838 Watt Ave., Suite C303, Sacramento, CA 95821-2664 (916-488-3772). **Skeptics Society** (Los Angeles). Contact Michael Shermer, 2761 N. Marengo Ave., Altadena 91001.

COLORADO and WYOMING. **Rocky Mountain Skeptics,** Béla Scheiber, President, P.O. Box 7277, Boulder, CO 80306.

DISTRICT OF COLUMBIA, DELAWARE, MARYLAND, and VIRGINIA. **National Capital Area Skeptics,** c/o D. W. "Chip" Denman, 8006 Valley Street, Silver Spring, MD 20910.

FLORIDA. **Tampa Bay Skeptics,** Gary Posner, 6219 Palma Blvd., #210, St. Petersburg, FL 33715 (813-867-3533).

GEORGIA. **Georgia Skeptics,** Becky Long, President, 2277 Winding Woods Dr., Tucker, GA 30084.

ILLINOIS. **Midwest Committee for Rational Inquiry,** Lawrence Kitsch, President, P.O. Box 2792, Des Plaines, IL 60017-2792.

INDIANA. **Indiana Skeptics,** Robert Craig, Chairperson, 5401 Hedgerow Drive, Indianapolis, IN 46226.

KENTUCKY. **Kentucky Assn. of Science Educators and Skeptics** (KASES), Chairman, Prof. Robert A. Baker, 3495 Castleton Way North, Lexington, KY 40502.

LOUISIANA. **Baton Rouge Proponents of Rational Inquiry and Scientific Methods** (BR-PRISM), c/o Wayne R. Coskrey, P.O. Box 82060, Baton Rouge, LA 70884-2060.

MASSACHUSETTS. **Skeptical Inquirers of New England.** Contact Laurence Moss, Ho & Moss, 72 Kneeland St., Boston 02111.

MICHIGAN. **Great Lakes Skeptics,** Carol Lynn, contact, 1264 Bedford Rd., Grosse Pointe Park, MI 84230-1116.

MINNESOTA. **Minnesota Skeptics,** Robert W. McCoy, 549 Turnpike Rd., Golden Valley, MN 55416. **St. Kloud ESP Teaching Investigation Committee** (SKEPTIC), Jerry Mertens, Coordinator, Psychology Dept., St. Cloud State Univ., St. Cloud, MN 56301.

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NEW YORK. **Finger Lakes Association for Critical Thought,** Ken McCarthy, 107 Williams St., Groton, NY 13073. **New York Area Skeptics** (NYASk), William Wade, contact person, 97 Fort Hill Road, Huntington, NY 11743-2205. **Western New York Skeptics,** Tim Madigan, Chairman, 3159 Bailey Ave., Buffalo, NY 14215.

NORTH CAROLINA. **N.C. Skeptics,** Michael J. Marshall, Pres., 3318 Colony Dr., Jamestown, NC 27282.

OHIO. **South Shore Skeptics,** Page Stephens, 6006 Fir Avenue, Cleveland, OH 44102 (216-631-5987). **Association for Rational Thinking** (Cincinnati area), Joseph F. Gastright, Contact, 111 Wallace Ave., Covington, KY 41014, (513) 369-4872 or (606) 581-7315.

PENNSYLVANIA. **Paranormal Investigating Committee of Pittsburgh** (PICP), Richard Busch, Chairman, 5841 Morrowfield Ave., #302, Pittsburgh, PA 15217 (412-521-2334).

SOUTH CAROLINA. **South Carolina Committee to Investigate Paranormal Claims,** John Safko, 3010 Amherst Ave., Columbia, SC 29205.

TEXAS. **Houston Association for Scientific Thinking** (HAST), Darrell Kachilla, P.O. Box 541314, Houston, TX 77254. **North Texas Skeptics,** Joe Voelkering, President, P.O. Box 111794, Carrollton, TX 75011-1794. **West Texas Society to Advance Rational Thought,** Co-Chairmen: George Robertson, 4700 Polo Pky., Apt. 183, Midland, TX 79705-1542 (915-367-3519); Don Naylor, 404 N. Washington, Odessa, TX 79761.

WASHINGTON. The Society for Sensible Explanations, Philip Haldeman/Michael Dennett, T.L.P.O. Box 8234, Kirkland,

(continued on next page)

WA 98034.

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- Convenes conferences and meetings
- Publishes articles that examine claims of the paranormal
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