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THE MAGAZINE FOR SCIENCE AND REASON

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CONSCIOUSNESS AND PARAPSYCHOLOGY

**'Demonic'
Visitation:
A Case
Study**

**Italy's
Harry
Houdini**

**Spontaneous
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SPECIAL REPORT

***Critiquing
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- **Darwin in Mind**
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At the age of thirty-two, Italian paranormal investigator Massimo Polidoro is the author of half a dozen books, performs and lectures to capacity crowds across the globe, runs a national organization of Italian skeptics, and is a hit with the Italian media. A life that may seem very complex to most is very simple to Polidoro: he is merely leading a life inspired by his boyhood hero Harry Houdini.

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EDITOR'S NOTE

The Kubrick/Clarke Year, and Our Own Odyssey

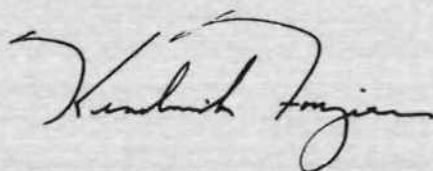
I started thinking about this column just before New Year's, so perhaps it's understandable that, in the spirit of New Year's resolutions, I have a thank you to give and a guilt to express. The thank yous are, in fact, two: to our readers and to our authors. Together, you are our strength. I may be biased (well, *I am* biased), but I think our readers are the best: smart, curious, questioning, knowledgeable, concerned, aware. Thank you for your suggestions, your ideas, your keen interest, and your criticisms. As for our authors, you are unsung heroes. You bring your world-class knowledge, expertise, passion, dedication, and concern to the task of investigating, evaluating, interpreting, explaining, informing, and educating. The articles in this issue exemplify that. And you do it for only intangible rewards—knowing that you are contributing to the public good. My guilt? That's easy. I haven't been as good a correspondent with readers and authors (would-be and actual) as I would like. For every message and letter I manage to respond to, there are five others I want to but do not. I am sorry. Given the volume of material and the limitations of time, I cannot do much better. But I do wish it were otherwise. Thank you for understanding.

* * *

This is not only the Kubrick/Clarke year of 2001, with all the ideas and images that engenders, it is the year we at CSICOP and the SKEPTICAL INQUIRER celebrate our 25th anniversary. It has been quite an odyssey! No space to reflect on all that now, more later. Just wanted you to know.

* * *

Forget about UFOs. The real thing is in the sky! And you've got to go look at it. A huge spacecraft is visible in our nighttime skies. Ever since the International Space Station got its wings (solar panels) in early December, courtesy of the crew of the space shuttle *Endeavour*, the ISS has shone brightly by reflected sunlight on some of its early-evening or before-sunrise passes. (Perhaps 2001 wasn't so far ahead, after all.) My wife Ruth and I had seen it twice earlier from Albuquerque but witnessed a dramatic passage early in the evening of December 29. We had the special advantage of ideal seeing conditions: a crisp, clear night outside a cabin at an elevation of 8,740 feet in the northern New Mexico mountains, miles from any lights. It was spectacular! The ISS crossed the entire sky from west to east. You could almost see (or perhaps imagine) structure to it. Friends in Albuquerque saw the same passage, so city lights don't matter too much. One of my colleagues later told me it affected him the same way it did me: For both of us it aroused the excitement we remembered as kids when seeing Sputnik, the world's first artificial satellite, in October 1957. Except this is a lot brighter. Various Web sites, including NASA's and *Sky & Telescope's* (www.skypub.com), can tell you where to look from your location, but one of the best is Heavens-Above: www.heavens-above.com. Check it out!



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Retired Air Force Balloon Expert Expands on Origin of 'Majestic 12' UFO Hoax

DAVID E. THOMAS

B.D. "Duke" Gildenberg worked for many years in the United States Air Force (USAF) Skyhook Balloon program, run out of Holloman Air Force Base in Alamogordo, New Mexico. The program was involved with numerous top-secret activities on the White Sands Missile Range in southern New Mexico. Some of the Skyhook balloons were five times larger than the Hindenberg Zeppelin's seven million cubic feet, carried payloads up to five tons, and flew at altitudes above twenty miles. They were undoubtedly responsible for numerous Unidentified Flying Object (UFO) sightings attributed elsewhere to extraterrestrial spacecraft.

Recently Gildenberg has been researching the origins of "Majestic 12," a supposed secret government group with responsibility for UFO-related activities, like reverse engineering of the "alien ship" rumor says was recovered at Roswell. Prominent UFO author William Moore released the first of the purported MJ-12 documents on May 29, 1987, along with Jaime Shandera and Stanton Friedman (Peebles 1994). Philip J. Klass has found numerous flaws which prove that the documents are forgeries, most notably that President Truman's signature on a key MJ-12 memo was photocopied from a legitimate, non-UFO related letter (Klass 1990). Several other eccentricities, such as date formats, suggested links to William Moore himself (Klass 1989).

Gildenberg's studies led him to focus on two men involved with MJ-12: Sgt. Richard C. Doty, formerly a special agent with the Air Force Office of Special Investigations (AFOSI) at Kirtland AFB in Albuquerque, New Mexico, and Paul Bennewitz, president of a small physics firm (Thunder Scientific Lab) in Albuquerque, and also a UFO investigator for the Aerial Phenomena Research

Organization (APRO). Bennewitz was very active in UFOlogy, eventually coining the now-famous terms "grays" and "extraterrestrial biological entities (EBEs)." He was routed to Sgt. Doty in November of 1980, when he approached AFOSI for information on UFO sightings. Doty himself became heavily involved in UFOlogy, even appearing as secret informant "Falcon" on a program entitled "UFO Cover-up? Live!" televised nationally October 14, 1988 (Peebles 1994).

In the summer of 1980, Bennewitz began to record strange radio signals in the vicinity of the Manzano Weapons Storage Area (then a repository for nuclear warheads southeast of Albuquerque on the eastern edge of Kirtland AFB). He snuck around the area and photographed strange lights emanating from Coyote Canyon, a remote test area on Kirtland just south of the Manzano facility. But even though Bennewitz's many UFO claims were later severely tarnished by his mental problems (Peebles 1994), the curious activities near Coyote Canyon were corroborated by more credible sources, including the Military Police. For example, MPs reported suspicious aerial observations over Coyote Canyon on August 8, August 11, and September 2, 1980 (Good 1988). Armed with Bennewitz's observations, Doty contacted William Moore and provided material related to what was called secret "Project Aquarius."

The UFO researchers eventually connected Project Aquarius to covert "UFO"-related activity at Holloman, and also linked it to a site in Montana. Gildenberg thinks Project Aquarius can be directly related to a Cold War project actually called "Project Gopher," and also called WS119L. (WS stands for "Weapons System," an intentional misnomer. It was not really a weapons system.) The program was so classified that even a top-secret briefing for some top CIA officials did

not reveal it (Klass 1983, p. 17).

Gildenberg participated directly in the WS119L project, which involved using high-altitude balloons to carry reconnaissance cameras directly over Soviet territory, taking full advantage of confusion between its flights and "UFOs" whenever possible. When Russian premier Khrushchev banged his shoe on a table at the United Nations in 1955, that table also held a large object—a balloon-supported recon camera—from the WS119L program itself. The 119L program was directly linked to project Moby Dick, also heavily involved in UFO lore (Peebles 1991).

The MJ-12 documents included a supposed top-secret briefing for President-elect Eisenhower on Roswell and aliens, in which General Nathan Twining participated. There actually was a classified briefing for Eisenhower, but it didn't concern Roswell. The briefing was conducted by Rand Corporation, whose officials monitored WS-119L and other classified reconnaissance programs. General Twining was involved because he was the top military figure involved with WS-119L.

But Gildenberg says the MJ-12 connections go well beyond the one linking "Aquarius" with WS119L. The Coyote Canyon sightings Bennewitz made were reported to Doty, and eventually to Moore, and ultimately led directly to the creation of the MJ-12 "conspiracy" legend.

It turns out that Gildenberg knows what Bennewitz saw in the summer of 1980 at Coyote Canyon. It happens that Gildenberg's Skyhook group was flying tethered balloons in support of a highly classified program in Coyote Canyon on the exact days the MP's reported activity. Gildenberg's Skyhook balloons were not themselves classified, but the payload they supported was.

In addition to the tethered Skyhooks, Gildenberg would release small pilot balloons ("pibals") to measure wind speeds

during the experiments. The illuminated half of the Skyhook support balloon definitely presented a "saucer-like" appearance, and the bright lights shining on the small, rapidly ascending pibal balloons produced a "zooming/vanishing" effect when the lights were turned off. These effects combined to produce what looked like flying saucers skirting erratically over Coyote Canyon.

Gildenberg has uncovered many other connections between the dark world of UFO conspiracy and the equally gloomy world of the Cold War in the 1950s and 1960s. For example, part of the Roswell mythology involves a crashed alien ship near Corona, New Mexico; and, some 1980s information searches under "Corona" revealed secret classifications. Gildenberg recalls that small animals such as chimps were flown in Project Discoverer nose cones as unclassified projects, not hidden from the public. But a secret military project was also included in some Discoverer nose cones, and the name of *this* project was Project Corona. Corona was actually an early satellite reconnaissance program, but it wasn't declassified until the 1990s. Thus, UFO researchers looking for information on "Corona" in the 1980s would find a tantalizing but classified trail.

Gildenberg claims many of the mysteries of the conspiracy-laden UFO world are explained, once the veils of secrecy are pulled from America's own clandestine Cold War experiments.

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- David E. Thomas, a physicist, is president of *New Mexicans for Science and Reason* and a *SKEPTICAL INQUIRER* consulting editor.

L. Sprague de Camp: Erudite Writer on Archaeology, Ancient Engineering, and Pseudoscience (and Science Fiction Too)

L. Sprague de Camp, author of more than 100 science fiction and fantasy novels plus nonfiction works on archaeology, ancient engineering, and fringe-science and pseudoscience, died November 11, 2000, in Plano, Texas, where he lived. He was 92. His wife, Catherine, his constant companion and frequent co-author, had died in April 2000.

De Camp was a founding CSICOP Fellow. In fact, accompanied by Catherine, he participated in the conference at which CSICOP was formally founded, "The New Irrationalisms: Antiscience and Pseudoscience," April 30–May 1, 1976, at the State University of New York at Buffalo. One of his comments there pungently countered the litany from credulous believers that you must always keep an open mind. "Many people have developed minds that are not only open, but gaping," he said.

He also spoke at the conference of the circular logic often used by pseudoscientists, such as UFO enthusiasts who start by assuming what they wish to prove—that flying saucers exist. He outlined five criteria for judging UFO contact reports. And he spoke of the tendency for pseudoscientific ideas—such as astrology, which by the beginning of the 1900s had been thoroughly discredited—to keep popping up in new guise: "In the history of cultism, one is always experiencing a feeling of *déjà vu*."

He also lambasted the then-highly popular ancient-astronaut works of Erich von Däniken. "Von Däniken's books are solid masses of misstatements, errors, and wild guesses presented as facts, unsupported by anything remotely resembling scientific data." He said a thorough analysis would require a book several times larger than the original. "It would take years of my time; and, if I were mad enough to write it, who then would read it?"

De Camp, a native of New York City,

was one of the leading early figures in science fiction, getting his start in the 1930s and 1940s at the same time as colleagues such as Isaac Asimov, Robert A. Heinlein, Lester del Rey, and Frederik Pohl. John W. Campbell, the influential editor of *Astounding Science Fiction* magazine, pointed to de Camp's stories as an example of the kind of science fiction he was looking for.

They were based on imaginative but careful and reasonable extrapolation from contemporary science. De Camp was known for his erudition (especially about history), scientific accuracy, polished writing, and "swashbuckling" style.

Although best known as a fiction writer, de Camp was a meticulous researcher who brought his interests in science, history, and archaeology and his background as an engineer (B.S. in aeronautical engineering from California Institute of Technology in 1930; masters from Stevens Institute of Technology in 1933) to his nonfiction works. During World War II, de Camp, Heinlein, and Asimov independently worked on research projects at the Materials Laboratory of the Naval Air Experimental Station at the Philadelphia Navy Yard. "For three-and-a-half years, Heinlein, Asimov, and I navigated desks and fought the war with flashing slide rules," de Camp later wrote.

(In a letter to me in June 1981, de Camp addressed claims in a newly published crank book, *The Philadelphia Experiment*, that during World War II scientists at the Philadelphia Navy Yard had developed a way to make a ship invisible. He pointed to how he, Asimov, and Heinlein were all there. "If any experiment remotely resembling that described by Messrs. Berlitz and Moore had taken place. I am sure we should have heard about it. I need hardly say that we heard not a word, nor was any of our own work along such lines.")

De Camp's book *Ancient Engineers*, published in several editions, chronicles the ingenious methods engineers throughout history (Egyptian, Mesopotamian, Greek, Hellenistic, early and late Roman, Oriental, and European engineers) used in constructing great works and monuments. According to a current list on Barnes & Noble's Web site, *Ancient Engineers* is his best-selling in-print book.

For *Great Cities of the Ancient World* (1972) he traveled thousands of miles over several years to study thirteen ancient sites. *Citadels of Mystery* (1964, with Catherine) explored twelve wonders of the ancient world; the back cover of the 1989 Ballantine edition described him as "a man with the mind of an archaeologist, the heart of an adventurer, and the soul of Indiana Jones."

Several of his books were about fringe-science and pseudoscience. Among them are *Lost Continents: The Atlantis Theme in History, Science, and Literature*, described as "the most detailed study ever compiled of lost continent mythology"; *Spirits, Stars, and Spells* (1966, with Catherine), about magic and occultism; *The Ragged Edges of Science* (Owlswick Press, 1980), a collection of articles on the borderland between "the bright-lit land of science on one side, and the dark domain of magic, occultism, and pseudoscience on the other"; and *The Fringe of the Unknown* (Prometheus 1983), another collection of articles on borderline or controversial matters in science and technology. It included chapters on Mad Men of Science, Orthodoxy in Science, Hoaxes in Science, and Little Green Men from Afar.

In 1995, Prometheus published his *The Ape-Man Within*, a book of social anthropology that considered why people behave in such unreasonable, ineffective ways, exploring how viewing others as adversaries had been a survival trait in our primitive past.

De Camp's writings in the *SKEPTICAL INQUIRER* include "The Uses of Credulity" (Spring 1986, reprinted in the *SI* anthology *The Hundredth Monkey*, 1991) and his tribute to Isaac Asimov ("one of my oldest, closest, and

most beloved friends") in the Fall 1992 "Celebration of Isaac Asimov" issue (reprinted in the 1997 edition of Asimov's *The Roving Mind*).

In "The Uses of Credulity," he considered that "when a characteristic like human credulity becomes so widespread in a species, we must suspect that it plays a part in enabling the species to survive, even though we may not know what that function is." He said some credulity is necessary for people to embrace an ideology, and ideology "is one of the lubricants, like liquor and hypocrisy, that enable men to live together. . . ." Yet ideologies can and often do get out of hand. "So we must continue to combat the more destructive ideologies. The scientific debunker's job may be compared to that of the trash collector. The fact that the garbage truck goes by today does not mean that there will not be another load tomorrow. But if the garbage were not collected at all, the results would be much worse. . . ."

—Kendrick Frazier

Kendrick Frazier is Editor of the *SKEPTICAL INQUIRER*.

Aromatherapy Company Settles Lawsuit Disputing Health Claims

Los Angeles attorney Morsé Mehrban has won a civil lawsuit against Aroma Vera, Inc., a leading manufacturer of aromatherapy supplies and personal-care products. The suit, filed in 1997, charged that the company and its president Marcel Lavabre had violated California's Business and Professions Code by making advertising false claims about many products.

Mehrban disputed that the products can promote health and wellbeing, relax the body, relax the mind, enhance mood, purify the air, are antidotes to air pollution, relieve fatigue, tone the body, nourish the skin, promote circulation, alleviate feminine cramps, or do various

other things claimed by the company.

Mehrban's suit sought restitution for consumers, cessation of these claims, and payment of reasonable attorney fees and costs.

The National Council Against Fraud served as the plaintiff, and I was the expert witness in the case. The case was settled out of court with a \$5,700 payment to Mehrban and a court-approved stipulation prohibiting the defendants from making fifty-seven of the disputed advertising claims within California.

A case summary can be viewed at www.quackwatch.com/04ConsumerEducation/News/mehrban.html; the consent agreement is at www.quackwatch.com/04ConsumerEducation/News/mehrbansettlement.html.

—Stephen Barrett

Stephen Barrett, M.D., is Board Chairman of Quackwatch, Inc. P.O. Box 1747, Allentown, PA 18105.



Photo by Benjamin Radford

Tabloid Busts Fox TV on Pyramid Special

Tabloid television shows are better known for promoting pseudoscience and the paranormal than being skeptical of them. But the show *Inside Edition* recently exposed trickery and deceit on the 1999 Fox TV special "Opening the Lost Tombs: Live From Egypt," hosted by Maury Povich. The television "event" was one of the most successful TV

specials in recent years, garnering worldwide publicity with its promise that viewers could watch as ancient Egyptian tombs would be unearthed on live television. In the program, Povich and Egyptologist Zahi Hawass explored pyramids and found mummies and ancient artifacts, apparently for the first time.

The *Inside Edition* segment, "Povich and the Tombs," shows that much of the special was not in fact a dramatic live discovery as promised, but instead a staged event. The segment was reported by Matt Meagher and aired in December 2000.

Doubts about the authenticity of Fox's claims came from many quarters, including University of Bristol Egyptologist Aidan Dodson, who said of Hawass, "He's very much giving the impression that these things are being found in front of the camera, which is certainly not the case. Zahi Hawass is probably one of the most distinguished Egyptian Egyptologists around. There's no way that Zahi would ever have opened anything live unless he knew what was on the other side of the door."

Under questioning from Meagher, Hawass admitted that in most cases he knew exactly what they would find. Meagher asked him, "When you're down in a tomb with Maury Povich, and you open a wooden coffin, is that the first time you had seen the coffin?" Hawass: "Me? . . . No. That burial chamber belonged to the tomb that we found a month ago. Before the show."

Hawass explained that most of the things he showed live had indeed been seen before, emphasizing that it was live *for the audience*, not necessarily for him or the world. When Hawass was asked if he thought that the viewers believed that these tombs were being opened for the very first time, he responded that he didn't know. "I don't care about live or not live!" Hawass said.

There was also some question about the accuracy of claims regarding another pyramid. Said Meagher, "Later in the show, viewers were told they were witnessing the opening of this Queen's

Pyramid—a pyramid Fox said hadn't been explored in 5,000 years." In fact, the pyramid had been previously explored several times and written about as early as the 1800s. Questioning Hawass, Meagher quoted from the Fox special: "We opened the Queen's Pyramid—See what no one has seen for five millennia." Is that accurate?" Hawass responded, "That's . . . that's . . . no."

"I cannot discover a tomb in two hours," the beleaguered Hawass said. "What do you want me to tell you? It was a set-up? Okay, fine."

In fairness to Hawass, it seemed that he was being called to answer for many of Fox's misstatements. The respected Egyptologist, in his love for his work and honest desire to interest the world in ancient Egypt, had apparently been nudged into bending the truth for the special. For his part, Povich said that he had understood that the discoveries he and Hawass were making had never been

seen before by anyone.

In fact, similar allegations were published in the September/October 1999 *SKEPTICAL INQUIRER* by Richard Carrier. In his special report "Flash! Fox News Reports that Aliens May Have Built the Pyramids of Egypt!" Carrier wrote, "The 'reality' aspect of the show is also suspect; much of it seemed staged. It was apparent that Hawass has explored many of these sites before, identifying art and translating inscriptions, in preparation for the show (and then, perhaps, 'setting them up' by covering them with sand)."

Even without the most recent revelations, the Fox special was shameless in its approach. Though reality and good science surfaced now and then, much of the show included theories of advanced civilizations, aliens, psychic Edgar Cayce, UFOs, the Face on Mars, and Atlantis.

—Benjamin Radford

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



W.V. Quine (1908–2000)

The skeptics community has lost a powerful supporter. Willard Van Orman Quine, considered to be one of the leading contemporary American philosophers, died on December 25, 2000. A proponent of pragmatism, he was a defender of scientific methodology as the most reliable path to knowledge. He defended a naturalized epistemology. For Quine, sense experience is integrated with mathematical and scientific abstraction to postulate theories about the world, that are tested or disconfirmed.

Quine was one of the original 25 scientists, philosophers, and skeptics who endorsed a statement sponsoring the formation of the Committee for the Scientific Investigation of Claims of the Paranormal, on May 1, 1976. He was elected as one of the first Fellows of CSICOP, along with other distinguished philosophers, such as Brand Blanchard (Yale), Ernest Nagel (Columbia), Sidney Hook (NYU), and Antony Flew (Reading University). Quine taught all during his life at Harvard University. He became president of the American Philosophical Association and was elected as a Humanist Laureate of the International Academy of Humanism. He was also a founding contributing editor of *Philo*, the leading freethought theoretical magazine in the world, now published at the Center for Inquiry. Among his writings were *From a Logical Point of View* (1953), *Word and Object* (1960), *Philosophy of Logic* (1970), *Pursuit of Truth* (reissued in 1992), and *From Stimulus to Science* (1995).

—Paul Kurtz

Rousing World Skeptics Congress Convened in Sydney, Australia

PAUL KURTZ

The Third World Skeptics Congress—later renamed Skeptics World Convention III by the Australians so as not to confuse it with third-world countries—was held at the University of Sydney from November 10 through 12, 2000. The Sydney Congress followed closely on the heels of the Olympic games, which tested athletic prowess—we were testing mental gymnastics!

The first World Congress was held at the State University of New York at Buffalo in 1996, and the second was held at the University of Heidelberg in 1998. This Congress, according to the Australians, was by far the best—and I agreed—for it not only served up a mine of good information, but was pervaded by a rousing spirit of good will and humor. All told, forty speakers participated. The Congress was cosponsored by CSICOP and the Australian Skeptics—which comprises ten groups throughout the country, a lively and rather influential organization, which includes some of the leading figures in Australia: Phillip Adams (noted columnist and media celebrity), Dick Smith (highly respected businessman), and Alan Cameron (head of Australia's Securities and Investments Commission). Many leading scientists in Australia read papers, including Professor of Geology Ian Plimer, noted clinical immunologist Professor John Dwyer, paleontologist Michael Archer (director of the Australian Museum), anthropologist Macie J. Hennenberg, and others. The convention was organized by Barry Williams, the indefatigable Executive Director and editor of the organization's magazine, *The Skeptic*, and its President, Richard Gordon, M.D. Of special signif-



Paul Kurtz presents Australian skeptic Barry Williams with the "Distinguished Skeptics" award.

icance was the fact that CSICOP brought to the Congress skeptics from various Asian countries, including India, China, and Japan.

The main focus of the Congress was on alternative medicine, which has emerged as a global problem. It became clear that there needs to be coordinated international investigations of the claims of alternative medicine, particularly since pharmacological companies and self-proclaimed healers are selling their products and services and raking in large sums of money. Those who believe in evidence-based scientific medicine agreed that although we need an open mind about complementary therapies, we need to insist upon double-blind randomized tests.

There were three main sub-themes discussed at the Congress: (1) Health and (2) Well-being, which dealt with scams in medicine, and (3) Wealth, which exposed fraudulent financial schemes.

Throughout the Congress there were good-natured and provocative exchanges by between panel members and

the audience—which numbered over 400 at various sessions. Of special significance was the excellent address by Geoffrey Dean, probably the leading critical investigator of astrology in the world, which provided an overview of the scientific evidence for and against astrology, and the dearth of adequate empirical support. In a concurrent session, Sanal Edamaruku, head of the Indian Rationalist Association, criticized the deceptive godmen in his country. Ryutarou Minakama, representative of the Japanese Anti-Pseudoscience Activities Network, dealt with the Aum Supreme Truth cult. There was a hard-hitting critique of Qigong by a six-person Chinese delegation, headed by Professor Shen Zhenyu. CSICOP has a longstanding history of cooperation with skeptical Chinese groups. We have sent delegations to China and they have visited our conventions. Chinese delegates sought to expose Falun Gong, and, surprising to us, read a defense of the Chinese government's crackdown on and imprisonment of dissidents. Sima Nan, a popular debunker, demonstrated how tricks and illusions were employed by Qigong Masters and how such charlatans deserved to be punished by the Communist Party.

As Chairman of CSICOP I felt compelled to issue a disclaimer: CSICOP is interested in the scientific evaluation of Qigong. We deplore, however, any effort to defend political repression, and we wished to disassociate ourselves from the statements of the Chinese delegation. Incidentally, this was the first time

WORLDS SKEPTICS CONGRESS
Continued on page 34

Fund for the Future

CSICOP AT THE CENTER FOR INQUIRY



Promote CSICOP

Using the Media & Telecommunications to Promote Science and Reason

The Fund for the Future is a capital campaign to provide CSICOP with the resources needed to more effectively influence media and public opinion. The 90s were defined by a telecommunications revolution, along with an explosion of misinformation available to the scholar and citizen alike. The hunger for superstition, pseudoscience, the paranormal and miraculous solutions has never been more acute.



*CFI-International
Amherst, N.Y.*

The Ten-Year Plan

Contributions are needed for current priorities:

- Increased media appearances by skeptical spokespersons
- Press releases, opinion pieces and media alerts
- Greater exposure through the Internet, including webcasting
- National initiatives coordinated by the Council for Media Integrity
- Instructional materials introducing skepticism to elementary and secondary school students

- Video production



*CFI-Midwest
Kansas City, Mo.*

How Can You Help?

CSICOP has established its expertise and integrity. It's time to command more media attention and a larger audience. The Center for Inquiry Fund for the Future is about new methods of outreach and broader influence, and is driven by an ambitious ten-year strategic plan for growth.

We depend on the support of readers and friends to continue leading the international skeptical movement. Gifts to the Fund for the Future provide the resources we need to respond to today's challenges.

All gifts are gratefully accepted. The Fund for the Future welcomes gifts of encouragement and major investments.



*CFI-West
Los Angeles, Ca.*

Cash contributions and gifts of stock are needed for immediate growth and new initiatives. We also offer a range of planned giving opportunities, from bequests to assorted tax-advantaged trusts and pooled funds. Planned gifts support our work in the future and can provide an income stream for you and a beneficiary. You may also make a gift supporting the general endowment, or establish a special purpose fund underwriting a long-term project that expresses your personal interests and commitment to skepticism.

In today's stock market, gifts of highly appreciated securities offer particular advantages to the donor. When donating stock to a charitable organization, you avoid taxes and maximize the impact of the asset you are donating.

Contact the Development Director at (716) 636-7571 to discuss accomplishing your philanthropic and financial goals and contributing to the Fund for the Future.

CSICOP

at the Center for Inquiry

P.O. Box 703

Amherst, NY 14226-0703

(716) 636-1425 ext. 311

Fax (716) 636-1733



Bill Nye "The Science Guy," Joe Nickell, and entertainer Steve Allen appear on a radio show.

Council for Media Integrity

Formed just weeks after its inclusion in the Ten-Year Plan, the Council for Media Integrity monitors and challenges media programs that convey unfounded claims and mislead the public about science. Members include E. O. Wilson, Stephen Jay Gould, and many others. CSICOP will invest in electronic infrastructure to facilitate rapid response to irresponsible programs.

Enhanced Library Resources

The Center for Inquiry's skeptics' library—already the finest of its kind in the world—needs additional funding to enlarge its core collection and add electronic media. Worldwide modem access to the library's catalog is already nearly complete.



Co-chair of the Fund for the Future Campaign: above, author and critic Martin Gardner.

Adult Education

The Council cosponsors the Center for Inquiry Institute, which has already expanded its offerings to include a new three-year certificate program in science and skepticism. Courses are scheduled in Amherst, Los Angeles, and other cities.

Regional Outreach

With the establishment of The Center for Inquiry—West (Los Angeles), The Center for Inquiry—Midwest (Kansas City) and The Center for Inquiry—Rockies (Boulder, Colorado), giant steps have been taken to enhance direct field service to skeptical activists. Additional regional centers are planned, with expanded calendars of activities.

Focusing Upon the Young

To present the skeptical message more compellingly to the young, CSICOP will develop new materials—ranging from age-appropriate print publications to audio and video cassettes and instructional coursework. Goals include enhanced understanding of science and improved critical thinking skills.





Distant Healing and Elisabeth Targ

Elisabeth Targ
Tries mighty hard
To convince everybody that
psychics in California can
Heal the sick in Afghanistan.

—A Clerihew

by Armand T. Ringer

I never cease to be amazed by how easily a set of beliefs, no matter how bizarre, will pass from parents to children, and on to grandchildren. I suspect that the vast majority of true believers in every major religion have parents and grandparents of the same faith. It is rare indeed when sons and daughters make a clean break with strongly held fundamental beliefs of their parents.

This was brought home to me recently when E. Patrick Curry, a retired computer engineer, now a consumer health advocate in Pittsburgh, sent me a batch of material about Elisabeth Targ, daughter of the parapsychist Russell Targ. Readers of *SI* will recall how the

Martin Gardner has two new books of essays: Did Adam and Eve Have Navels? Discourses on Reflexology, Numerology, Urine Therapy, and Other Dubious Subjects (W.W. Norton, 2000), based on his SKEPTICAL INQUIRER Notes of a Fringe-Watcher columns; and From the Wandering Jew to William F. Buckley Jr.: On Science, Literature, and Religion (Prometheus Books, 2000), a collection of his other essays and reviews.

team of Targ and his parapsychist friend Harold Puthoff made a big splash in parapsychological circles in the 1970s. They claimed to have established beyond any doubt that almost everybody is capable of "remote viewing," their term for what used to be called clairvoyance. In addition, they claimed they had validated Uri Geller's psychic ability to remote-view pictures, and his ability to control the fall of dice by PK (psychokinesis). They sat on the fence about Uri's ability to bend spoons and keys because they were never able to capture the actual bending on film. Some parapsychologists called this a "shyness effect."

Russell inherited his psi beliefs from his father, William Targ. When I lived in Chicago I used to visit the father's bookstore on North Clark Street, a store he opened when he was twenty-two. It had a large section devoted to books about the paranormal and the occult. After working for a time as an editor for World Publishing Company, in Cleveland, Targ moved to Putnam in Manhattan where he rose to editor-in-chief. His entertaining autobiography, *Indecent Pleasures*, was published in 1975. At Putnam Targ was responsible for many best-sellers, including Erich von Däniken's notorious *Chariots of the Gods*. (In his autobiography Targ calls it a "quasi-scientific" work on archaeology.) Under his editorship Putnam also published a raft of books about psy-

chic phenomena, such as Susy Smith's *Book of James* in which she reports on channeled messages from the spirit of William James. Targ died in 1999, at age ninety-two. His original name was William Torgownic, taken from his parents when they came from Russia to settle in Chicago where he was born.

William Targ's beliefs in the paranormal trickled down to his son Russell, and now they have descended on Russell's attractive and energetic daughter Elisabeth. Her mother Joan, by the way, is the sister of chess grandmaster Bobby Fischer. Elisabeth is a practicing psychiatrist with an M.D. from Stanford University, and psychiatric training at UCLA's Neuropsychiatric Institute. Ms. Targ is firmly convinced that persons have the power to use psi energy to heal the sick over long distances even when they don't know the sick but only see their photographs and are given their names.

Elisabeth first participated in psi experiments when she was a teenager. On page ninety-six of *The Mind Race* (1984), a book by Russell Targ and his former psychic friend Keith Harary, Elisabeth is identified as a medical student at Stanford, and an "experienced psi-experimenter and remote viewer." In 1970 she took part in a series of what the authors call successful experiments with a psi-teaching machine. She is said to have recently obtained degrees in biology and Russian.

The authors describe a curious

experiment in which Elisabeth correctly predicted in September 1980 that Reagan would win the November election for president. Here is how the test worked.

Ms. Targ's friend Janice Boughton selected four objects to represent the four possible outcomes of the election: Carter wins, Reagan wins, Anderson wins, or none of the above. Each object, its identity unknown to Elisabeth, was put in a small wooden box. Boughton then asked Ms. Targ, "What object will I hand to you at twelve o'clock on election night?"

Elisabeth then predicted the election's outcome by remote-viewing the object she would be given. Her description of the object was white, hollow, conical, with a string attached to the cone's apex. The object that correlated with Reagan's victory was a conical shaped whistle with a string attached to one end.

Of course six weeks later Ms. Targ had to be handed the box with the whistle. Otherwise, as the book's authors put it, the initial question would have been meaningless.

A similar test of Elisabeth's ability to remote-view a future event involved a horse race at Bay Meadows. On the night before the race, six objects, unknown to Ms. Targ, were assigned numbers that corresponded with numbers on the six horses in the race. As before, Elisabeth was told that at the end of the race she would be given the object that correlated with the winning horse.

Ms. Targ predicted the race's outcome by visualizing something hard and spherical that reminded her of an apple and was transparent. One of the objects was an apple juice bottle. It had been assigned the number on a horse named Shamgo. Shamgo won. Naturally, after the race Elisabeth had to be handed the apple juice bottle to make sense of the experiment.

What a skeptic would like to see would be a transcript of everything Elisabeth said when she was describing the target. Did she say much more than the remarks quoted by her father and his coauthor? If so, there may have been a selection of just those remarks that seemed to describe the target. But I'm only guessing. Also, were there similar

tests that failed? One in four, and one in six, are not low probabilities.

There is more about Elisabeth in the book. In May 1982 she and her father conducted a workshop at the Esalen Institute during which successful remote vision tests were carried out with Ms. Targ participating.

Although Ms. Targ is firmly persuaded that distant healing works, she confesses that no one has any notion of how a healer and healee can be connected over long distances.

Elizabeth Targ is now the acting director of the Complementary Medicine Research Institute (CMRI). It is part of the California Pacific Medical Center (CPMC), in turn part of the University of California School of Medicine. Her institute is devoted to investigating such alternative forms of healing as acupuncture, acupressure, remote healing, therapeutic touch, herbal remedies, meditation, yoga, *chi gong*, guided imagery, and prayer. The institute's literature does not mention homeopathy, reflexology, iridology, urine therapy, magnet therapy, and other extreme forms of alternative healing. Apparently they are too outlandish to merit investigation.

In 1998 Ms. Targ received \$15,000 from the Templeton Foundation, an organization established by billionaire John Templeton, an evangelical Presbyterian who showers cash on persons and organizations he thinks are promoting religion. His interest in Ms. Targ's institute springs from her research supporting the healing power of prayer.

In a speech on distant healing that Ms. Targ gave at the Second Annual International Conference on Science and Consciousness, in Albuquerque, New Mexico, April 29–May 3, 2000, she reported that the National Institutes of Health (NIH) now provides funds for research on "distant mental influence on biological organisms." Of more than 135 studies of distant healing on biological organisms, she said, about two-thirds reported significant results. One fasci-

nating study, she added, concerned remote healing of tumors on mice. The study showed that the healers who were farthest from the mice had the greatest influence in shrinking the tumors!

Ms. Targ has received \$800,000 from the Department of Defense to head a four-year study of the effects of alterna-

tive healings on patients with breast cancer. The complementary healings include yoga, guided imagery, movement and art therapy, and others. "We are getting told that we can't study this," she said, "but the beauty of the scientific method is that we can. We can determine if it works—and if so, for whom and how."

CRMI's main achievement so far is a six-month double-blind study of the effects of remote healing on forty patients in the San Francisco Bay area who had advanced AIDS. Forty practicing healers were recruited for the study from healing traditions that included Christians, Jews, Buddhists, Native American shamans, and graduates of "bioenergetic" schools. They were given photographs of the AIDS victims, their first names, and their blood counts.

For an hour every day, over a ten-week period, the healers directed their psi energy to the patients by using prayer or meditation. The experiment was supported by the Institute of Noetic Studies, founded by astronaut Edgar Mitchell, a true believer in all varieties of psychic phenomena, including the powers of Uri Geller, and by New York City's Parapsychology Foundation.

Ms. Targ and three associates reported the results of the experiment in a paper titled "A Randomized Double-Blind Study of the Effects of Distant Healing in a Population with Advanced AIDS." It was published in the prestigious *Western Journal of Medicine* (December 1998). The authors claim

that the twenty AIDS patients who received the healing energy (without knowing they had been selected for such treatment), showed significantly better improvement than the twenty patients in the control group who did not receive the energy. As one report summarized the progress of the group receiving the energy, they had "fewer and less severe new illnesses, fewer doctor visits, fewer hospitalizations, and improved mood."

The NIH, through its National Center for Complementary and Alternative Medicine (NCCAM), has provided funding for Ms. Targ to conduct a three-year study of distant healing on 150 HIV patients. The funding for the first year alone is \$243,228, with a starting date of July 1, 2000. The NCCAM has also funded a four-year project to study the effect of distant healing on persons with a brain tumor called glioblastoma. The starting date was September 18, 2000, with a first-year grant of \$202,596. Both studies, Ms. Targ said, will be double blind. It looks as though Ms. Targ, over the next few years, will be receiving more than two million dollars of government funds for her research on remote healing, the cash coming from our taxes.

Ms. Targ is the author of "Evaluating Distant Healing: A Research Review," published in *Alternative Therapies* (Vol. 3, November 1997), and in the same issue, "Research in Distant Healing Intentionality Is Feasible and Deserves a Place in Our Healing Research Agenda." The executive editor of *Alternative Therapies* is Dr. Larry Dossey, who started the distant healing research with his 1993 book *Healing Words: The Power of Prayer and the Practice of Medicine*.

Although Ms. Targ is firmly persuaded that distant healing works, she confesses that no one has any notion of how a healer and helee can be connected over long distances. She closes the second paper just cited with these words: "The connection could be through the agency of God, consciousness, love, electrons, or a combination. The answers to such questions await future research."

Russell Targ's first book, *Mind Reach*,

coauthored by Puthoff, is about their tests of remote viewing when they worked for SRI International (then called the Stanford Research Institute). Margaret Mead wrote the book's introduction. Targ's second book, *Mind Race*, was written, as I said earlier, with psychic Keith Harary. His third book *Miracles of Mind: Exploring Nonlocal Consciousness and Spiritual Healing*, published in 1998 by World Library, is coauthored with Jane Katra, a psychic healer.

The first half of *Miracles of Mind* covers the history of remote viewing, including high praise for Upton Sinclair's book *Mental Radio* about his wife's ability to remote view his drawings. The second half of *Miracles of Mind* is about psychic healing. Targ believes that such healing, especially healing at a distance, is related to the "interconnectedness" of all things by a quantum field such as the nonlocal field of David Bohm's guided wave theory of quantum mechanics.

Miracles of Mind is a strange book. Some chapters are written by Targ, others by Jane Katra. In a few chapters it is hard to tell who is writing. Almost every person engaged in parapsychological research is favorably mentioned, including such far-out paranormalists as Jule Eisenbud, Andrija Puharich, Jeffrey Mishlove, Joe McMoneagle, and many others.

Katra owes an enormous debt to theosophy. She speaks admiringly of Madame Blavatsky, theosophy's founder, as well as England's leading theosophists Annie Besant and Charles Leadbeater. I could hardly believe it, but the book cites (page 94) *Occult Chemistry*, a weird 1898 book by Besant and Leadbeater which describes Leadbeater's clairvoyant probing of the interior of atoms. He is actually credited with having first discovered by clairvoyance that hydrogen has three isotopes!

Miracles of Mind takes seriously such paranormal phenomena as out-of-body travel, near-death experiences, chakras (imaginary energy points in the human body), the Akashik Records (on which all Earthly events are recorded), the visions of Edgar Cayce, and the paranormal powers of Philippine psychic surgeons (to which Katra devotes an entire chapter). There are favorable ref-

erences to *The Course in Miracles*, a monstrous, vapid tome said to have been dictated by Jesus. Also mentioned without criticism are the powers of Arigo, Brazil's famous psychic surgeon who operated with his "rusty knife" on thousands of patients, following instructions whispered in his left ear by a dead German physician.

Targ credits Jane with having stimulated a seemingly miraculous remission of what had been diagnosed (by whom?) as metastatic cancer. "I have been well for the five years since Jane did healing treatments with me," Targ writes. "We will never know if I actually had metastatic cancer, or if it was a misdiagnosis. What we do know for sure is that Jane's interactions with me saved me from chemotherapy, which quite likely would have killed me. . . . Did they [his doctors] tell a well man that he had a terminal disease, or did a man with a terminal disease recover through the ministrations of a spiritual healer?" Targ has no doubt that it was Jane Katra who healed him.

The following paragraphs from one of Patrick Curry's letters sum up well the distant healing trend in which Ms. Targ is playing so prominent a role:

The rise of Elisabeth Targ's distant healing studies is *not* a mere example of defective science leaking into medicine . . . it is a leading wedge of a nascent mystical movement that has been gathering tremendous steam in recent years. The parapsychological enterprise has taken on a new life in its alliance with alternative medicine and the consciousness movement. What we have is a very productive alliance of parapsychologists, old-fashioned mystics, new-fashioned mystics, and psychedelic mystics that has gotten a major foothold in medicine.

Their presence is extraordinarily strong within NCCAM (National Center for Complementary and Alternative Medicine) and other alternative-oriented sections of NIH (National Institutes of Health). There is a growing presence at dozens of major medical schools, especially Harvard. . . . They have primary devotion not to the ethics of science but to their own belief that they have a mission in serving the New Consciousness. Distortion, and exaggeration of all sorts, are ignored in devotion to their belief in the new paradigm. □



Mysterious Australia

It is a spectacular land to which many superlatives apply. Separated from the other continents for some forty million years, Australia has produced unique flora and fauna, and its history “began twice”: first, some fifty to sixty thousand years ago when the nomadic Aborigines reached the shores, and second, on January 18–20, 1788, when eleven British ships arrived laden with convicts (Chambers 1999, 1–10).

I had a wonderful opportunity to visit Down Under during the Third Skeptics World Convention, held in Sydney on November 10–12, 2000. I determined to extend my sojourn another two weeks, so that I could investigate several myths and mysteries. I began with the “haunted” Hyde Park Barracks and then was

joined by Sydney magic historian Peter Rodgers for three days of excursions. Subsequently, the Victoria Skeptics generously flew me to Melbourne. From there, Australian Skeptics’ Chief Investigator Bob Nixon, Victoria Skeptics vice-president Richard Cadena, and I motored along the “Shipwreck Coast” to Warrnambool pursuing other

mysteries. Here is an encapsulated skeptical look at some of these Australian enigmas. (I hope to discuss others later.)

Convicts’ Ghosts

Reputedly “the most haunted building in Central Sydney” (Davis 1998, 2), the Hyde Park Barracks served as secure housing for government-assisted male

ren who stay on organized sleep-overs to gain the “convict experience.”

Unlike most “haunted” places the Barracks maintains a ghost file, containing accounts of experiences recorded just after they occurred. Curator Michael Bogle graciously made these available for me to study in his office. Bogle takes a “professionally neutral”

stance on the subject of hauntings, but admits he has himself had no ghostly experiences. (Neither had four staff members I interviewed there; a fifth described a few incidents she attributed to a ghost, but none occurred at the Barracks.)

Despite the neutrality, the museum’s solicitation of overnight visitors’ “thoughts and feelings” about their visit—utilizing a handout with space to record their impressions—no

doubt encourages spooky thoughts. The handout says in part: “Should you have an ‘erie’ meeting of some sort, or merely sense an inexplicable presence, the museum would appreciate your

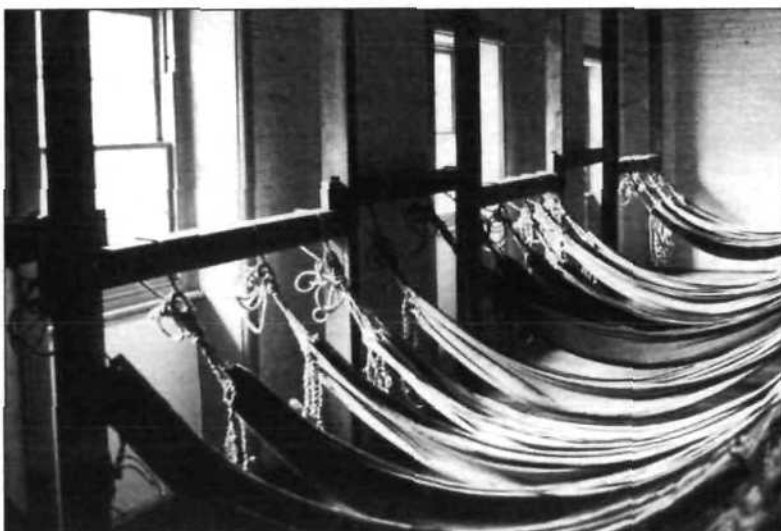


Figure 1. Hammocks in the “haunted” old Hyde Park Barracks in Sydney where it is possible to spend the night, thus recreating the “convict experience.” (Photos by Joe Nickell)

convicts. Opened in mid-1819, its central building held an average of 600 men who were assigned to various workplaces by day and lodged at night in twelve rooms outfitted with hammocks (figure 1). Now a museum, it has attracted reports of various phenomena attested by security guards and others who spend the night there, including schoolchild-

Joe Nickell is CSICOP’s Senior Research Fellow and author of numerous investigative books.

description—with as much detail as possible.” It continues: “The accompanying [floor] plans will help you on your journey through the building and enable you, where appropriate, to map any ‘out of the ordinary’ occurrences.”

Not surprisingly, then, several people did report having eerie feelings. For instance, one pre-Halloween (October 11), 1991, account stated that a security guard “hoped” a certain fellow guard “could make a connection with the ghost” which “everyone in Security knew of” and which was typically experienced as “a chilling sensation” on the third floor. Other respondents described apparent “waking dreams”: sometimes apparitional experiences that occur in the twilight between wakefulness and sleep (Nickell 1995; 2000). For example, one

respondent reported seeing “a man standing beside my hammock looking at me” and wearing period clothes. Her account reveals she had “tried to imagine what it must have been like for the convicts who stayed there”—thus helping set the stage for such an experience.

On occasion in the written narratives are suggestions of possible pranking—as when one of a group of forty-seven schoolchildren felt a “long hand” reach in under her sleeping bag to touch her on the hip (or was that instead merely the effect of a runaway imagination, or even another waking dream?). Once, a child’s footsteps heard by two guards were first attributed to one of the children having gotten up but—that reportedly not having been the case—was explained as a sound that “must have been made by the wind.” One experiencer heard a tapping sound that staff subsequently ascribed to a mechanized display.

Such incidents seem typical of those reported at the Hyde Park Barracks, as well as many other allegedly haunted sites. For instance, “some say” that the Old Melbourne Gaol is “the repository of many troubled spirits, the ghosts of criminals who suffered and died there” (Davis

1998, 174). Certainly it is a stark showing of nineteenth-century penal life with exhibits of grim implements of restraint and punishment together with various *mementos mori*. An advertising brochure promises: “Experience the haunting and eerie atmosphere of the gaol, and by listening carefully, you can almost hear the clank of the prisoners’ chains.”

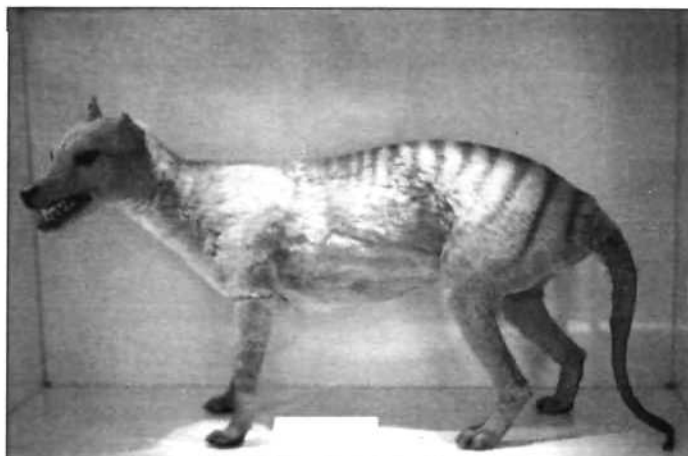


Figure 2. Thylacine or “Tasmanian tiger”—believed extinct since 1936—as a mounted specimen in the Australian Museum.

However, evidence of ghostly phenomena at the site is scant, notwithstanding a questionable “ghost” photo half-heartedly brought out by a giftshop employee when the topic of hauntings was broached. She conceded that some people did get “feelings” at the site but that she had worked there for ten years without paranormal experience of her own. She jokingly conceded that she only worked one day a week and that perhaps “the ghosts take Tuesdays off.”

Cryptids

The term “cryptid” has been coined to refer to unknown animal species or to those which, believed extinct, may only have eluded scientific rediscovery (Coleman and Clark 1999, 75). Examples of the former are the yowie (Australia’s version of Bigfoot) and the bunyip (a swamp-dwelling, hairy creature with a horselike head) (Coleman and Clark 1999, 49–50; 255–257). An example of the latter is the thylacine.

Also known as the Tasmanian tiger, the *Thylacinus cynocephalus* was a wolflike marsupial with prominent stripes on its back (figure 2). It became extinct on the mainland some 2,500

years ago, but continued to exist on Tasmania where it eventually succumbed to habitat destruction and bounty hunting. The last known thylacine died in a zoo in 1936 (Park 1985). Nevertheless, since then hundreds of sightings have been reported, and were even on the increase in the 1980s; however, there were scant reports

of attacks on sheep or other domestic animals as would have been expected if thylacines were making a comeback (Park 1985).

Still, thylacines are “frequently reported seen in the coastal border country between Victoria and South Australia” (Gilroy 1995, 74). Indeed, as we drove along the Great Ocean Road from Melbourne to Warrnambool, Bob Nixon recalled one reported Tasmanian tiger sighting some years ago near Lorne (where we ate lunch). This was an area of virgin “bush” country (a eucalypt forest), but, alas, all we saw was beautiful scenery. (I also kept an eye out for the thylacine while looking for the yowie in the Blue Mountains—to be discussed presently—another area where the striped creature is reportedly seen [Gilroy 1995].)

Hope springs eternal, but it increasingly appears that if the thylacine is not to forever remain elusive, an idea of paleontologist Mike Archer must prevail. Archer, who is also director of the Australian Museum, has suggested resurrecting the species. Using DNA from a preserved specimen, he proposes to clone the creature, giving us a glimpse of that possibility at the skeptics conference. (For a discussion of the relevant biotechnology see Lanza et al. 2000.)

The yowie, on the other hand, has left only meager traces of its supposed existence, like those of other hairy man-beasts reported around the world. These include the Himalayan yeti, the North American sasquatch, and similar creatures alleged to inhabit remote regions of China, Russia, southeast Asia, and elsewhere.

The yowie is a fearsome, hairy creature

of Aboriginal mythology. Also called Doolagahl ("great hairy man"), it is venerated as a sacred being from the time of creation which the Aborigines call the Dreamtime. An alleged sighting by a hunting party of settlers in 1795 was followed by increased reports from the mountainous regions of New South Wales in the nineteenth century. For example, in 1875 a coal miner exploring in the Blue Mountains west of Sydney reportedly stalked a hairy, apelike animal for a distance before it finally eluded him. Sightings of the yowie mounted as settlers penetrated the country's vast interior, and yowie hunter Rex Gilroy (1995, 197) now notes that his files "bulge with stories from every state."

The self-described "father" of yowie research, Gilroy (1995, 202) boasts the acquisition of some 5,000 reports together with a collection of footprint casts, but he complains of "a lifetime of ridicule from both ignorant laymen and scientists alike." When Peter Rodgers and I ventured into the Blue Mountains, we experienced something of the prevalent local skepticism at the information center at Echo Point (in the township of Katoomba). Staffers there were emphatic that the yowie was a mythical creature pursued by a few fringe enthusiasts. (To them yowies exist only as popular toys and chocolate figures marketed by Cadbury.)

Nevertheless, to Gilroy "the Blue Mountains continues to be a hotbed of yowie man-beast activities—a vast region of hundreds of square miles still containing inaccessible forest regions *seldom if ever visited by Europeans*." The fabled creatures are known there, he says, as the "Hairy Giants of Katoomba" and also as the "Killer Man-Apes of the Blue Mountains" (Gilroy 1995, 212).

In the Katoomba bushland, Peter and I took the celebrated "steepest incline railway in the world" (built as a coal mine transport in 1878) down into Jamison Valley. The miserable weather gave added emphasis to the term *rain-forest* through which we "bushwalked" (hiked) west along a trail. We passed

some abandoned coal mines that Peter humorously dubbed "yowie caves," before eventually retracing our route. We saw no "Hairy Giants of Katoomba" but, to be fair, we encountered little wildlife. The ringing notes of the bellbird did herald our visit and announce that we were not alone.



Figure 3. Terrain of the legendary yowie (Australia's Bigfoot) viewed through Carlotta Arch in the Jenolan Caves region.

Resuming our drive we next stopped at Meadlow Bath, an historic resort area overlooking the Megalong Valley—also reputed yowie country (Gilroy 1995, 217–218). From there we surveyed the countryside which was, however, largely *shrouded in fog*. We continued on to Hartley, then took a narrow, winding road some 44 kilometers to Jenolan Caves. Gilroy (1995, 219) states that the Aborigines believed the caves were anciently used as yowie lairs, and he cites reported sightings and discoveries of footprints in the region.

We passed through the Grand Arch, a majestic limestone-cavern entranceway into a hidden valley, and surveyed the spectacular grotto called Devil's Coachhouse, continuing our cryptozoo-

logical pursuit. We searched the surrounding mountainous terrain (see figure 3) for signs of the elusive yowie, again without success. Here and there the raucous laughter of the kookaburra seemed to mock our attempt. An employee told us he had worked at the site for three years without seeing either a yowie or the inn's resident "ghost," indicating he believed in neither.

Failing to encounter our quarry, we ended our hunt relatively unscathed—soaked, to be sure, and I with a slightly wrenched knee. But consider what might have been: headlines screaming, "Skeptics mauled by legendary beast!"—a tragic way to succeed, certainly, and with no guarantee, even if we survived, that we would be believed! Even Gilroy conceded (1995, 202) that "nothing short of actual physical proof—such as fossil or recent skeletal remains or a living specimen—will ever convince the scientific community of the existence of the 'hairy man.'"

But that is as it should be: In many instances the touted evidence for Bigfoot-type creatures—mostly alleged sightings and occasional footprints—has been shown to be the product of error or outright deception (Nickell 1995, 222–231). Cryptozoologists risk being thought naïve when they too quickly accept the evidence of "manimal" footprints. "Some of these tracks," insists Gilroy (1995, 224), "have been found in virtually inaccessible forest regions by sheer chance and, in my view, must therefore be accepted as authentic yowie footprints." It seems not to have occurred to the credulous monsterologist that a given "discoverer" might actually be the very hoaxer. But the debate continues.

Spiritualist's Grave

Among the sites that supposedly make Australia "a very haunted continent" is the Rookwood Cemetery in Sydney ("International" 2000). One of the graves



Figure 4. Trio of magicians—Joe Nickell, Peter Rodgers, and Kent Blackmore—recreating 1910 gathering of Houdini and friends at the grave of spiritualist William Davenport.

there has a profound link to spiritualism and once attracted famed magician Harry Houdini. It is the burial place of one of the notorious Davenport Brothers and the subject of an interesting story.

Ira and William Davenport toured the world giving demonstrations of alleged spirit phenomena. While the pair were securely tied in a special “spirit cabinet,” the “spirits” played musical instruments and performed other “manifestations” in darkened theaters. Then on July 1, 1877, while they were on tour in Australia, the long-ailing younger brother William died and was buried at Rookwood.

Decades later, in 1910, while Houdini was himself on tour there (and incidentally entered Australian history by becoming the country’s first successful aviator), the great magician/escape artist paid a visit to the grave, accompanied by two fellow magicians (Christopher 1976). Houdini (1924) found the grave “sadly neglected” and so, he wrote, “I had it put in order, fresh flowers planted on it and the stone work repaired.” Subsequently, when Houdini met the surviving brother, Ira was so moved by Houdini’s act of kindness that he confessed the brothers’ tricks, even teaching his fellow escapologist “the famous Davenport rope-tie, the secret of which,” Houdini noted, “had been so well kept

that not even his sons knew it.”

My own interest in the Davenport Brothers was renewed when I was able to help bring to light the contents of their personal scrapbook (Nickell 1999). I had continued my interest in the duo by locating and visiting Ira’s grave in Mayville, New York. Now, finding myself in Sydney, I determined to recreate Houdini’s visit to William’s grave. I was accompanied again by Peter Rodgers and by another magician, Kent Blackmore (both of whom had visited the site in 1983).

The Rookwood Cemetery is huge, requiring some time for us to relocate the grave (in the Church of England Necropolis, section E, grave number 848). Armed with weed clippers and a bouquet of fresh flowers, we soon had made the site presentable once again. Like the trio who preceded us in 1910, we three magi posed for photographs to record the event (figure 4). Alas, neither William Davenport’s nor any other spirit put in an appearance—as far as we could tell. But it was nevertheless an occasion to recall those who lived in earlier times and to reflect on how things have since changed yet remained much the same. For instance, while the physical manifestations of spiritualism’s earlier era have largely been supplanted by mental

mediumship (as practiced by spiritualists like John Edward and James Van Praagh), the attraction to alleged spirit communication continues.

So does the interest in other paranormal claims. Although I pursued several mysteries that had a decidedly Australian flavor, they nevertheless represented many of the same themes—hauntings, monsters, etc.—that are found virtually everywhere. How familiar is the strange, we might say, and even, considering Australia’s distinctive natural offerings, how strange the familiar.

Acknowledgments

I am supremely grateful to John and Mary Frantz for their generous establishment of an investigative fund that helps make much of my research possible. Also, in addition to those mentioned in the text, I am grateful to my Australian friends Barry Williams and Ian Bryce for their assistance. Closer to home I also owe thanks to Michael Dennett, Christian Ambrose, Tim Binga, Tom Flynn, Ranjit Sandhu, Ben Radford, Lisa Hutter, Barry Karr, Kevin Christopher, and—of course—Paul Kurtz.

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The Great Chupacabra Conspiracy

For about the last year, Chile and other South American countries have suffered a veritable blitz of chupacabra attacks, the supposed ferocious “goat suckers” that torment Hispanic farmers and ranchers, but never trouble those from other cultural backgrounds. Joseph Trainor’s UFO Roundup from the U.K. informs us (www.ufoinfo.com/roundup/v05/rnd05_21.shtml) that, the newspaper *Cronica* of Concepción, Chile, reported that not only were the chupacabras up to their usual tricks, but that they appear to be at the center of a sinister conspiracy. In fact, a whole family of the fierce little devils were reportedly captured—a Daddy Chup, a Mommy Chup, and a tiny little Baby Chup—and were delivered to agents of the USA’s FBI agency which arrived at Calama from Santiago [where the American federal police have an office in their embassy]. The creatures quietly would have been taken to the USA, where I suppose they were carried away to Area 51.

In Nicaragua, rancher Jorge Luis Talavera apparently shot one of the elusive chupacabras on August 25, 2000. The wounded creature staggered off, but its remains were discovered three days later and delivered to the Universidad Nacional Autónoma de Nicaragua (UNAN) in Leon. This caused great excitement among cryptozoologists and UFOlogists, only to be deflated when

a short time later the university announced that the remains were that of a dog. However, local residents are outraged, insisting that university officials must have switched the genuine chupacabra remains with that of a dog. Dr. Edmundo Torres, vice chancellor and director of scientific research at UNAN-Leon, denies that any such thing was

done, but he is assumed to be part of the conspiracy. Talavera claims to have sighted a second chupacabra, but this one is only “about the size of a Pekinese dog,” which would make it all the easier for the scientists-in-cahoots to switch the body of this genuine fierce creature with that of a yappy, spoiled pup.

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But some serious-minded investigators seek to initiate a scientific study of chupacabras and raise it above the level of ridicule. With this aim, Dr. Virgilio Sanchez-Ocejo of the Miami UFO Center has given the alleged creatures the “scientific name” of “hemo predator.” His Web site at <http://bloodpredator.homestead.com> contains de-

tails on the recent major sightings. It contains photos of animals that have supposedly been killed by chupacabras, and supposed tracks of the beast. You can even listen to a simulation of the Blood Predator’s fearsome cry. One intriguing hypothesis suggested on the Web site is that the chupacabras may actually be “alien pets.”

But Chupacabras are not the only strange creatures running about that scientists are too closed-minded to accept. According to a recent BBC news story (http://news.bbc.co.uk/1/hi/english/world/asiapacific/newsid_1059000/1059099.stm) no less a personage than Princess Rangsrinopadorn Yukol of Thailand claims to have seen, and even filmed, long-haired elephants (said to be related to woolly mammoths) that have secreted themselves in a remote part of that country. But Dr. Preecha Puangkam,

Robert Sheaffer’s World Wide Web page for UFOs and other skeptical subjects is at www.debunker.com.

an expert on elephants, said after viewing the film that it shows only ordinary elephants, and he even identified the herd captured on film. But this has not deterred a band of intrepid explorers, including the Princess, who have set off into the wilderness to stalk the woolly

hundreds of wings that propel them through the sky. Science does not seem aware of them, but we obtain a steady stream of these reports. We urge anyone to attempt to capture them for scientific analysis. Assuming these reports are accurate we may have discovered a new

seen in the photos, revealing that the camera was much closer to the ground than anyone had previously suspected. Either farmer Trent ran out of the house with his camera, then unexpectedly crouched down near the ground to get photos of a saucer as it flew by, or else he wanted to put as much distance as possible between his camera and the tiny model UFO that he had hung from the overhead wires. Carpenter says, "The overall geometry of the positions and the attributes of the camera suggest that he was attempting to frame a nearby object in such a way as to maximize the amount of sky around it and enhance its apparent altitude." You can judge for yourself after seeing Carpenter's pages at www.ufx.org/mcminn/photo.htm.

Veteran researcher Don Worley of the Institute for UFO Research has listed a number of instances in which the UFO aliens abducted someone but brought them back wearing different clothes.

Thai neo-mammoths. We wish them the best of luck.

This column recently reported on the mysterious, fast-moving "flying rods" that are being reported from many places (SI March/April, 2000, p. 20). MUFON's Eastern Director George A. Filer reports (http://ufoinfo.com/filer/2000/ff_0039.shtml) that one of these critters was apparently captured and killed with bug spray. According to Filer, Chuck Rogers of Bethlehem, Pennsylvania, inadvertently captured a rod in his home, which tried to escape. "Apparently it was caught inside a grocery bag in his sink and started to thrash until it flew swiftly out of the bag. Barely visible, it flew into the next room where his lab is located and hit the foam tile ceiling a few times. Sulfur powder was in the lab and used to control parasites on their dog. He spotted the flying rod and sprayed insect spray at it and didn't see it for a while. He spotted a diaphanous, transparent, and obviously immobile (dead) object in the sulfur powder. When he touched the object, it disintegrated into the powder." Since the remains of the creature in the powder have apparently not been saved, the loss to science is incalculable.

Filer adds, "Periodically we receive reports of flying objects that appear to be something like flying transparent jellyfish, caterpillars, or rods. They have been videotaped and appear to come in various sizes from a few inches long to ten feet or more. They seem to have

life form. Sometimes they appear to have light-making ability similar to lightning bugs."

In recent years, UFO proponents have one case they have been touting as the most solid, indisputable proof of the existence of flying craft seen in plain daylight. It is the pair of famous photos taken by the late Paul Trent of McMinnville, Oregon, on May 11, 1950, and left unresolved by the Condon Committee investigation in 1969. (This is in spite of numerous inconsistencies and implausibilities that have been known for years. See my Web page at www.debunker.com/trent.html.) Now UFOlogist Joel Carpenter seems to have dealt the Trent photos a major, and possibly fatal, blow.

Carpenter, an enthusiast for restoring old vehicles, noted the similarity of Trent's supposed UFO to the side mirrors that were used in trucks during the 1920s and 30s. As it happens, the principal reason that the Trent "UFO" is considered anomalous is that the Condon investigation revealed that densitometric measurements of its underside show it to be brighter than expected for a plain, shaded white nearby surface.

However, if the underside of the object is a mirror instead of a diffuse reflector, what we are seeing is not a shaded surface but the reflection of a sunlit patch of ground, and we should hence expect a much higher reading. Carpenter also did a virtual reality reconstruction of the nearby objects

Recent research reveals that the alien abductors are not quite as clever as some have thought. In fact, in many cases they can be downright careless and stupid. Veteran researcher Don Worley of the Institute for UFO Research has listed a number of instances in which the UFO aliens abducted someone but brought them back wearing different clothes (www.frii.com/~iufor/worley.htm). For example, one woman was apparently abducted wearing a Victoria's Secret nightgown, but brought back wearing a man's oversized shirt. "What man awakened in the Victoria's Secret nightgown," asks Worley, "and what did he tell his wife?" Another woman apparently had her nightgown switched for the T-shirt of a Japanese marathon runner (which is all the more puzzling, given the almost total absence of UFO abduction claims from Japan). A farmer in Illinois moved but apparently failed to inform his regular UFO abductors, who peered in the usual windows and frightened the new tenants out of their wits.

* * *

Just because not much has been written lately about the ongoing war on the part of Scientology against its critics does not mean that they have suddenly reverted to civilized norms (see this column, September/October 1995). If anything, it means that such harassment has

become so commonplace that it is no longer newsworthy. In Clearwater, Florida, the location of one of Scientology's major headquarters, an ongoing battle rages against anti-Scientology protesters and pickets, most of whom are from the Lisa McPherson Trust (named for a young woman who died of neglect and/or mistreatment while in "isolation" in a Scientology "prison" for persons who have broken the rules—see www.xenu.net/archive/events/lisa_mcperson/the_trust). This frequently involves shoving and other physical interference against critics that somehow the Clearwater police are unable to "see." Many of the Clearwater police officers during their off-duty hours are paid \$21 per hour by Scientology to serve as a private security force, and critics charge that this makes it impossible for the police to be fair and neutral in the ongoing battle of ideologies.

Critics have filmed Scientologist strong-arm agents physically interfering with protesters and sticking gum on their camera lenses, but Clearwater police are singularly uninterested in the indisputable video evidence of these crimes. In February 2000 some German filmmakers requested to interview one Scientologist at his home. He declined. Shortly afterward, as the filmmakers were walking back onto the street, a man with a hammer ran out from the house threatening them, and hitting their video camera with the hammer. The entire hammer attack was captured on video (you can see the video at www.lisatrust.net/Media/barnard.htm), but Clearwater police refused to arrest or prosecute the man, and suggested that it was the filmmakers who were "trespassing" and committing a "felony" by recording the attack without the attacker's permission. The Scientologist with the hammer, Richard Bernard, was later found to be wanted for skipping bail on a charge of cocaine trafficking, and was arrested and sent to Key West to serve a one-year sentence. (Scientology claims to be uncompromisingly anti-drugs, but apparently sees no problem in using drug dealers as their attack dogs.)

Engineer Keith Henson of Palo Alto, California, a free speech advocate and

one of Scientology's most persistent critics, has been driven into personal bankruptcy by the group. He posted on the Internet a letter he wrote to a judge, containing an excerpt from one of Scientology's secret scriptures about how the group's "E-meters" (crude devices that are nothing more than simple galvanometers) could be used to diagnose and treat diseases. Henson argued that Scientology was practicing medicine without a license as well as promoting dangerous and unproven medical practices, and hence his revelation and discussion of this act constituted protected free speech on a subject of public interest. But after a series of bizarre rulings against Henson by the judge, Scientology obtained a judgment of \$75,000 against him for "copyright infringement." The amount of money that the organization has spent to crush Henson using top-dollar legal talent dwarfs the amount they could ever hope to collect from him by at least a factor of ten, and probably much more than that. Such persecution is clearly intended not to protect Scientology's legitimate interests but to serve as a warning to other would-be activists of the fate awaiting them should they follow Henson's example.

Now the Scientologists are attempting to have Henson put in jail for allegedly threatening to attack their main headquarters with nuclear cruise missiles (see www.xenu.net/archive/WIR/wir5-25.html). According to the police report on the incident, "some threats [were] being made against the Church on the Internet newsgroup, alt.Religion.scientology. In the documents, it shows Keith discussing how an ICBM (intercontinental ballistic missiles) could be accurate enough to hit the Church of Scientology. [G] also showed me documents that have pictures of the Church in San Jacinto, with satellite coordinates, so that a missile could be accurately launched at the Church." As far as is known, Henson possesses no nuclear weapons, nor any cruise missiles to deliver them. Nonetheless the case is going to trial in Riverside County, California, charging Henson with making "misdemeanor terrorist threats." □

The Young Skeptics Program

In an effort to promote science and skepticism among all generations, the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), is pleased to announce the launch of the Young Skeptics Program. The Web-based program is geared towards students, parents and educators.

The goals of the Young Skeptics Program are:

- To promote science and skepticism within all facets of society and among all generations.
- To provide multiple outlets for young people to learn and involve themselves in science, skepticism, and critical inquiry.
- To work with parents, teachers and students in an effort to promote learning, defend and advance science education, and encourage critical thinking in all areas of life.
- To help young people make sense of the world by developing the tools and gathering the information to navigate through the nonsense effectively.
- To nurture curiosity, wonder, and the imagination while sharing in the fascination of reality and the excitement our universe has to offer.
- To explore extraordinary claims and investigate unexplained phenomena, while enjoying ourselves in the process.
- To inspire future generations to proudly carry the torch of science and reason and keep the flame burning bright for years to come.

For more information please contact Program Director
Amanda Chesworth at
a.human@mindspring.com

What Can the Paranormal Teach Us About Consciousness?

Parapsychologists seem to assume that psychic phenomena—if they exist—would prove the “power of consciousness.” Yet this may be no more than trying to use one mystery to solve another. Susan Blackmore reviews some of the evidence for psi and asks just what it does tell us about consciousness.

SUSAN BLACKMORE

Consciousness is a hot topic. Relegated to the fringes of science for most of the twentieth century, the question of consciousness crept back to legitimacy only with the collapse of behaviorism in the 1960s and 1970s, and only recently became an acceptable term for psychologists to use. Now many neuroscientists talk enthusiastically about the nature of consciousness, there are societies and regular conferences on the topic, and some say that consciousness is the greatest challenge for twenty-first century science. Although confusion abounds, there is at least some agreement that at the heart of the problem lies the question of subjectivity—or what it’s like for *me*. As philosopher Thomas Nagel (1974) put it when he asked his famous



question “What is it like to be a bat?”—if there is something it is like *for the bat* then we can say that the bat is conscious. This is what we mean by consciousness—consciousness is private and subjective and this is why it is so difficult to understand.

Meanwhile parapsychologists not only claim to have found evidence for psi (paranormal phenomena), but seem to assume that paranormal phenomena have obvious and important implications for consciousness. For example, Dean Radin’s (1997) comprehensive popular review of parapsychology is called “The Conscious Universe: The Scientific Truth of Psychic Phenomena” and there are numerous papers on extrasensory perception (ESP) and psychokinesis (PK) that use such phrases as “consciousness interactions” (Braud and Schlitz 1991) or “the anomalous effect of conscious intention” (Pallikari-Viras 1997) or “consciousness related anomalies” (Radin and Nelson 1989). But why are these two contentious topics so often thrown together? Are ESP and PK really the effect of consciousness? Would paranormal phenomena, if they exist, force us to a new understanding of the nature of consciousness? If so they would be most important. I therefore wish to explore this assumed relationship between consciousness and psi.

I would love to be able to provide a fair and unbiased assessment of the evidence for psi and decide whether it exists or not. But this is simply impossible. Many people have tried and failed. In some of the best debates in parapsychology the proponents and critics have ended up simply agreeing to differ (e.g., Hyman and Honorton 1986; Hyman 1995; Uts 1995) or failing to reach any agreement (Milton and Wiseman 1999). The only

truly scientific position seems to be to remain on the fence, and yet to do so makes progress difficult, if not impossible.

For this reason, if for no other, you have to jump to one side or other of the fence—and preferably be prepared to jump back again if future evidence proves you wrong. I have jumped onto the side of concluding that psi does not exist. My reasons derive from nearly thirty years of working in, and observing, the field of parapsychology (Blackmore 1996). During that time various experimental paradigms have been claimed as providing a repeatable demonstration of psi and several have been shown to be false. For example, in the 1950s the London University mathematician Samuel Soal claimed convincing evidence of telepathy with his special subject Basil Shackleton, with odds estimated at 10^{35} against the effect being due to chance (Soal and Bateman 1954). These results convinced a whole generation of researchers and it took more than thirty years to show that Soal had, in fact, cheated (Markwick 1978). Promising animal precognition experiments were blighted by the discovery of fraud (Rhine 1974) and the early remote viewing experiments were found to be susceptible to subtle cues which could have produced the positive results (Marks and Kammann 1980). As Hyman (1995, 349) puts it, “Historically, each new paradigm in parapsychology has appeared to its designers and contemporary critics as relatively flawless. Only subsequently did previously unrecognized drawbacks come to light.”

The Ganzfeld Experiments

The most successful paradigm during that time, and the one I shall concentrate on, has undoubtedly been the ganzfeld. Subjects in a ganzfeld experiment lie comfortably, listening

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to white noise or seashore sounds through headphones, and wear halved ping-pong balls over their eyes, seeing nothing but a uniform white or pink field (the ganzfeld). By reducing patterned sensory input, this procedure is thought to induce a psi-conducive state of consciousness. A sender in a distant room, meanwhile, views a picture or video clip. After half an hour or so the subject is shown four such pictures or videos and is asked to choose which was the target. It is claimed that they can do this far better than would be expected by chance.

The first ganzfeld experiment was published in 1974 (Honorton and Harper 1974). Other researchers tried to replicate the findings, and there followed many years of argument and of improving techniques, culminating in the 1985 "Great Ganzfeld Debate" between Honorton (one of the originators of the method) and Hyman (a well-known critic). By this time several other researchers claimed positive results, often with quite large effect sizes. Both Hyman (1985) and Honorton (1985) carried out meta-analyses but came to opposite conclusions. Hyman argued that the results could all be due to methodological errors and multiple analyses, while Honorton claimed that the effect size did not depend on the number of flaws in the experiments and that the results were consistent, did not depend on any one experimenter, and revealed certain regular features of ESP. In a "joint communiqué" (Hyman and Honorton 1986) they detailed their points of agreement and disagreement and made recommendations for the conduct of future ganzfeld experiments.

The ganzfeld achieved scientific respectability in 1994 when Bem and Honorton published a report in the prestigious journal *Psychological Bulletin*, bringing the research to the notice of a far wider audience. They republished Honorton's earlier meta-analysis and reported impressive new results with a fully automated ganzfeld procedure—the Princeton autoganzfeld—claiming finally to have demonstrated a repeatable experiment.

Not long afterwards Wiseman, Smith, and Kornbrot (1996) suggested that acoustic leakage might have been possible in the original autoganzfeld. This hypothesis was difficult to assess after the fact because by then the laboratory at Princeton had been dismantled. However, Bierman (1999) carried out secondary analyses which suggested that sensory leakage could not account for the results. Since then further successes have been reported from a new ganzfeld laboratory in Gothenburg, Sweden (Parker 2000), and at Edinburgh, where the security measures are very tight indeed (Dalton, Morris, Delanoy, Radin, Taylor, and Wiseman 1996). The debate continues.

How can one draw reliable and impartial conclusions in such circumstances? I do not believe one can. My own conclusion is based not just on reading these published papers but also on my personal experience over many years. I have carried out numerous experiments of many kinds and never found any convincing evidence for psi (Blackmore 1996). I tried my first ganzfeld experiment in 1978, when the procedure was new. Failing to get results myself I went to visit

Sargent's laboratory in Cambridge where some of the best ganzfeld results were then being obtained. Note that in Honorton's database nine of the twenty-eight experiments came from Sargent's lab. What I found there had a profound effect on my confidence in the whole field and in published claims of successful experiments.

Questions About the Ganzfeld Research

These experiments, which looked so beautifully designed in print, were in fact open to fraud or error in several ways, and indeed I detected several errors and failures to follow the protocol while I was there. I concluded that the published papers gave an unfair impression of the experiments and that the results could not be relied upon as evidence for psi. Eventually the experimenters and I all published our different views of the affair (Blackmore 1987; Harley and Matthews 1987; Sargent 1987). The main experimenter left the field altogether.

I would not refer to this depressing incident again but for one fact. The Cambridge data are all there in the Bem and Honorton review but unacknowledged. Out of twenty-eight studies included, nine came from the Cambridge lab, more than any other single laboratory, and they had the second highest effect size after Honorton's own studies. Bem and Honorton do point out that one of the laboratories contributed nine of the studies but they do not say which one. Not a word of doubt is expressed, no references to my investigation are given, and no casual reader could guess there was such controversy over a third of the studies in the database.

Of course the new autoganzfeld results appear even better. Perhaps errors from the past do not matter if there really is a repeatable experiment. The problem is that my personal experience conflicts with the successes I read about in the literature and I cannot ignore either side. I cannot ignore other people's work because science is a collective enterprise and publication is the main way of sharing our findings. On the other hand I cannot ignore my own findings—there would be no point in doing science, or investigating other people's work, if I did. The only honest reaction to the claims of psi in the ganzfeld is for me to say "I don't know but I doubt it."

Similar problems occur in all areas of parapsychology. The CIA recently released details of more than twenty years of research into remote viewing and a new debate erupted over these results (Hyman 1995; Utts 1995). (See Ray Hyman, "Evaluation of the Military's Twenty-Year Program in Psychic Spying" and "The Evidence for Psychic Functioning: Claims vs. Reality," both in *SKEPTICAL INQUIRER* March/April 1996.) Whenever strong claims are made critics from both inside and outside of parapsychology get to work—as they should—but rarely is a final answer forthcoming.

These are some of the reasons why I cannot give a definitive and unbiased answer to my question "Are there any paranormal phenomena?" I can only give a personal and biased answer—that is, "probably not."

But what if I am wrong and psi does really exist? What would this tell us about consciousness?

A common view seems to be something like this: If ESP

exists it proves that mental phenomena are independent of space and time, and that information can get "directly into consciousness" without the need for sensory transduction or perceptual processing. If PK (psychokinesis) exists it proves that mind can reach out beyond the brain to affect things *directly* at a distance, i.e., that consciousness has a power of its own.

I suspect that it is a desire for this "power of consciousness" that fuels much enthusiasm for the paranormal. Parapsychologists have often been accused of wanting to prove the existence of the soul, and convincingly denied it (Alcock 1987). I suggest instead that parapsychologists want to prove the power of consciousness. In philosopher Dan Dennett's (1995) terms they are looking for "skyhooks" rather than "cranes." They want to find that consciousness can do things all by itself, without dependence on a complicated, physical, and highly evolved brain.

I have two reasons for doubting that they will succeed. First, parapsychologists must demonstrate that psi has something to do with consciousness and they have not yet done this. Second,

there are theoretical reasons why I believe the attempt is doomed.

The Missing Link Between Psi and Consciousness

To make their case that psi actually involves consciousness, experiments rather different from those commonly done will be needed. Let's consider the ganzfeld again. Do the results show that consciousness, in the sense of subjectivity or subjective experience, is involved in any way?

I would say no. There are several ways in which consciousness might, arguably, be involved in the ganzfeld, but there appears to be no direct evidence that it is. For example, are subjects conscious of their own success? Even in a very successful experiment the hits are mixed with many misses and the subjects themselves cannot say which is which (if they could the successful trials could be separated out and even better results obtained). In other words, the subject is unaware of the ESP even when it is occurring. Indeed in other contexts there have been claims that psi occurs unconsciously and can

Giving Up the Ghosts: End of a Personal Quest

Since writing "Why Psi Tells Us Nothing About Consciousness," Susan Blackmore has "given up the ghosts" altogether. This personal note tells why. She published this in slightly shorter form in New Scientist, November 4, 2000, and wanted to share it with SKEPTICAL INQUIRER'S readers.

—EDITOR

At last. I've done it. I've thrown in the towel, kicked the habit, and gone on the (psychic) wagon. After thirty years I have escaped from a fearsome addiction.

Come to think of it I'm not sure I've gone cold turkey yet. Only last month I was at my last psychical research conference. Only days ago did I empty out the last of those meticulously organized filing cabinets, fighting a little voice that warned: "Don't do it—you might want to read that again" as a great wave of relief swept it away with the thought "You've given up!" Paper after paper on ESP, psychokinesis, psychic pets, aromatherapy, and haunted houses hit the recycling sack. If the cold turkey does strike, the dustbin men will have taken away my fix.

Actually I feel slightly sad. Thirty years ago I had the dramatic out-of-body experience that convinced me of the reality of psychic

phenomena—and launched me on a crusade to show all those closed-minded scientists that consciousness could reach beyond the body and death was not the end. Just a few years of careful experiments changed all that. I found no psychic phenomena—only wishful thinking, self-deception, experimental error, and even an occasional fraud. I became a skeptic.

So why didn't I just give up then? There are lots of bad reasons. Admitting you are wrong is always hard—even though it's a skill that every scientist has to learn (or are some scientists always right?). But it does get easier with practice and I no longer fear having to change my mind. Starting again as a baby in a new field is a daunting prospect. So is losing all the status and power of being an expert. I have to confess I enjoy my hard-won knowledge. Yes, I have read Michael Faraday's 1853 report on table tipping, and the first 1930s studies in parapsychology, and the latest arguments over meta-analysis of computer-controlled ESP experiments, not to mention the infamous Scole report (*New Scientist*, January 22, 2000). Should I feel obliged to keep using this knowledge if I can? No. Enough is enough. None of it ever gets anywhere. That's good enough reason for leaving.

But perhaps the real reason is that I am just too tired—tired, above all, of working to maintain an open mind. I couldn't dismiss all those extraordinary claims out of hand. After all, they just might be true, and if they were true then whole swathes of science would have to be rewritten.

Another psychic claimant turns up. I must devise more experiments, take his claims seriously. He fails—again. I see a picture of Cherie Blair wearing her "bio-electric shield." It matters that people pay high prices for fake gadgets. I run the tests. The shields don't work. No one wants to know, for negative results aren't news. A man explains to me how alien abductors implanted something in the roof of his mouth. Tests show it's just a filling—but it might have been. . . .

No, I don't have to think that way any longer. And when the psychics and clairvoyants and New Agers shout at me (as they do), "The trouble with all you scientists is you don't have an open mind," I won't be upset. I won't argue. I won't rush out and do yet more experiments just in case. I'll smile sweetly and say, "I don't do that anymore."

—Susan Blackmore

be detected only by physiological monitoring, such as in remote staring experiments (Braud, Shafer, and Andrews 1993) or by using sophisticated brain recording techniques (e.g., Don, McDonough, and Warren 1998).

The ganzfeld does involve a kind of mild altered state of consciousness. Indeed Honorton first used the technique as a way of deliberately inducing a "psi conducive state." However, it has never been shown that this is a necessary concomitant of ESP in the ganzfeld. Experiments to do this might, for example, compare the scores of subjects who reported entering a deep altered state with those who did not. Or they might vary the ganzfeld conditions to be more or less effective at inducing altered states and compare the results. These kinds of experiments have not been done. In the absence of appropriate control conditions we have no idea what it is about the ganzfeld that is the source of its apparent success. It might be consciousness or the state of consciousness; it might be the time spent in the session, the personality of the experimenter, the color of the light shining on the subject's eyes, or any of a huge number of untested variables. There is simply no evidence that consciousness is involved in any way.

Another example is recent experiments on the remote detection of staring (e.g., Braud, Shafer, and Andrews 1993). It has long been claimed that people can tell when someone else is looking at them, even from behind. Ingenious experiments now use video cameras and isolated subjects to test this claim. Results suggest that the staring and non-staring periods can be distinguished by physiological responses in the person being stared at. In other words, they are able to detect the staring—but not consciously. Oddly enough, these results are often described in terms of "consciousness interactions" even though the detection is explicitly non-conscious.

In related experiments subjects are asked to influence biological systems such as another person's blood pressure or muscular activity, the spatial orientation of fish, movements of small mammals, or the rate of haemolysis of red blood cells. Influence and non-influence periods are randomly allocated and effects detected from the comparison. Braud and Schlitz (1991) call these "consciousness interactions with remote biological systems." Yet again, I am not convinced that these data need have anything to do with consciousness. If the data are genuine then I agree with the authors that they show "a profound interconnectedness between the influencers and the influencees in these experiments" (p. 41). But what could be responsible? Any number of things may change in the influencer—such as muscle tone, cortical arousal, expectation, the firing of specific neurons, the activity in different neural nets, and so on. If there is such a thing as PK it might be related to any of these variables. For example some unknown force might emanate when a particular cortical firing pattern occurs and this be more likely when the influencer is trying to influence the system. Such an effect need have nothing to do with consciousness or subjectivity at all.

In PK experiments the claim that consciousness is involved is again made explicit, as in the title "The effects of consciousness on physical systems" (Radin and Nelson 1989). Yet, as far as I can see, there is no justification for this. In these experiments a subject typically sits in front of a computer screen and

tries to influence the output of a random number generator (RNG), whose output is reflected in the display. Alternatively they might listen to randomly generated tones with the intention of making more of the tones high, or low, as requested, or they might try to affect the fall of randomly scattered balls or various other systems. The direction of aim is usually randomized and appropriate control trials are often run. It is claimed that, in extremely large numbers of trials, subjects are able to influence the output of the RNG. Is this an effect of consciousness on a physical system?

I don't see why. The experiments demonstrate a correlation between the output of the RNG and the direction of aim specified to the subject by the experimenter. This is certainly mysterious, but the leap from this correlation to a causal explanation involving "the effect of consciousness" is so far unjustified. The controls done show that the subject is necessary but in no way identify what it is about the subject's presence that creates the effect. It might be their unconscious intentions or expectations; it might be some change in behavior elicited by the instructions given; it might be some hitherto unknown energy given off when subjects are asked to aim high or aim low. It might be some mysterious resonance between the RNG and the subject's pineal gland.

As far as I know, no appropriate tests have been made to find out. For example, does the subject need to be conscious of the direction of aim at the time? Comments in the published papers suggest that some subjects actually do better when not thinking about the task, or when reading a magazine or being distracted in some other way, suggesting that conscious intent might even be counterproductive.

Perhaps this is not what is meant by consciousness here, but if not, then what *is* meant? Perhaps it is enough for the person to be conscious (i.e., awake), or perhaps the very presence of a person implies the presence of consciousness. In any case, to identify that the effect is actually due to consciousness, relevant experiments will have to be done. They might compare conditions in which subjects did or did not consciously know the target direction. Subjects might be asked on some trials to think consciously about the target and on others be distracted, or they might be put into different states of consciousness (or even unconsciousness) to see whether this affected the outcome. Such experiments might begin to substantiate the claim that consciousness is involved. Until then, it remains speculation.

Some parapsychologists have suggested to me that when they talk about consciousness affecting something they mean to include unconscious mental processes as well. Their claim would then be equivalent to saying that something (anything) about the person's mind or brain affects it. However, if the term *consciousness* is broadened so far beyond the subjective, then we leave behind the really interesting questions that consciousness raises and, indeed, the whole reason why so many psychologists and philosophers are interested in consciousness at all. If we stick to subjectivity then I see no reason at all why paranormal claims, whether true or false, necessarily help us understand consciousness.

Theoretical Problems

The second reason I doubt that the paranormal power of consciousness will ever be proven is more theoretical. As our understanding of conscious experience progresses, the desire to find the "power of consciousness" sets parapsychology ever more against the rest of science (which may, of course, be part of its appeal). The more we look into the workings of the brain the less it looks like a machine run by a conscious self and the more it seems capable of getting on without one (e.g., Churchland and Sejnowski 1992; Crick 1994). There is no place inside the brain where consciousness resides, where mental images are "viewed," or where instructions are "issued" (Dennett 1991). There is just massive parallel throughput with no obvious center.

Experiments such as those by Libet (1985) suggest that conscious experience takes some time to build up and is much too slow to be responsible for making things happen. For example, in sensory experiments he showed that about half a second of continuous activity in sensory cortex was required for conscious sensation, and in experiments on deliberate spontaneous action he showed that about the same delay occurred between the onset of the readiness potential in motor cortex and the timed decision to act—a long time in neuronal terms. Though these experiments are controversial (see the commentaries on Libet 1985; and Dennett 1991) they add to the growing impression that actions and decisions are made rapidly and only later does the brain weave a story about a self who is in charge and is conscious. In other words, consciousness comes after the action; it does not cause it.

This is just what some meditators and spiritual practitioners have been saying for millennia; that our ordinary view of ourselves, as conscious, active agents experiencing a real external world, is wrong. In other words we live in the illusion that we are a separate self. In mystical experiences this separate self dissolves and the world is experienced as one—actions happen but there is no separate actor who acts. Long practice at meditation or mindfulness can also dispel the illusion. Now science seems to be coming to the same conclusion—that the idea of a separate conscious self is false.

Parapsychology, meanwhile, is going quite the other way. It is trying to prove that consciousness really does have power; that our minds can reach out and "do" things, not only within our own bodies but beyond them as well. In this sense it is deeply dualist even while making reference to interconnectedness. Parapsychology is often perceived as being more "spiritual" than conventional science. I think it may be quite the other way around.

With the welcome upsurge of interest in consciousness, and the number of scientists and philosophers now interested in the field, I look forward to great progress being made out of our present confusion. I hope it will be possible to bring together the spiritual insights with the scientific ones—so that research can reveal what kind of illusion we live in, how it comes about, and perhaps even help us to see our way out of it. As far as this hope is concerned parapsychology seems to be going backwards—hanging onto the idea of consciousness as an agent separate from the rest of the world. This is why I doubt that evidence for psi, even if it is valid, will help us to understand consciousness.

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Spontaneous Human Confabulation: Requiem for Phyllis

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Examination of an oft-repeated tale of spontaneous human combustion reveals distortions, errors, and mystery mongering.

JAN WILLEM NIENHUYS

According to popular books on the unexplained, a young woman burst into flames spontaneously in a crowded discotheque in Soho, London, and burnt to ashes in minutes. This extraordinary event apparently occurred at the end of the 1950s.

The story of Maybelle Andrews dying such a tragic and mysterious way has appeared in a number of versions. In April 1999 it surfaced in the respectable world of a magazine about the Dutch language (where it caught my attention). The discotheque disaster was mentioned in an article about Dutch words for spontaneous human combustion, or SHC. The inspiration for that article was a 1991 firefighter's magazine. The story may have appeared reliable because firemen

supposedly don't tell old wives' tales.

Having investigated the various ways in which this and other similar stories have been reported in books and magazines, I can shed light on the tale's origin.

The Making of a Horror Story

Where does the Maybelle Andrews story come from? In itself it is highly implausible. Just for a start, an adult human body can't burn within five minutes just like that. Because of the short time involved, it would require a very high temperature, but the total heat of combustion of the human body is such that the effect would be similar to burning ten liters (or quarts) of gasoline within five minutes. The nightclub would have been gutted, and all people present would have died of a combination of lack of oxygen and smoke poisoning.

But the story of Maybelle isn't unique in the annals of SHC. There is a similar story that dates back to the sad death of Phyllis Newcombe as a consequence of a fire at the ballroom of the Shire Hall in Chelmsford, England, in 1938.

The story about Phyllis's accident first entered the world outside Essex through an item about the inquest, published in the *Daily Telegraph* on September 20, 1938. That story was somewhat unclear, because it didn't mention the date of Phyllis's death, and paid inordinately much more attention to the fact that the ambulance had taken all of twenty minutes to arrive. This may have given readers the superficial impression that the ambulance was too late to save Phyllis. Prominent in the story was a quote from Coroner L.F. Beccles: "From all my experience I have never come across a case so very mysterious as this."

The first author to write about Phyllis was science fiction writer Eric Frank Russell. In the May 1942 issue of *Tomorrow*, in the section "Scientific Fantasy," he described all kinds of mysterious deaths, including puzzling fire deaths. Of the latter he summarized nineteen cases (all from 1938 and the first week of 1939) that he had culled from British newspapers. He didn't mention Phyllis by name:

"Chelmsford woman burned to death in a dance hall" was followed by Beccles's quote. A revised version of Russell's article was printed in *Fate* (December 1950), and this was reprinted in March 1955 in the UK edition of *Fate*. In *Fate* "a dance hall" was changed to "in the middle of a dance hall" and Beccles' quote read "as mysterious" rather than "so very mysterious."

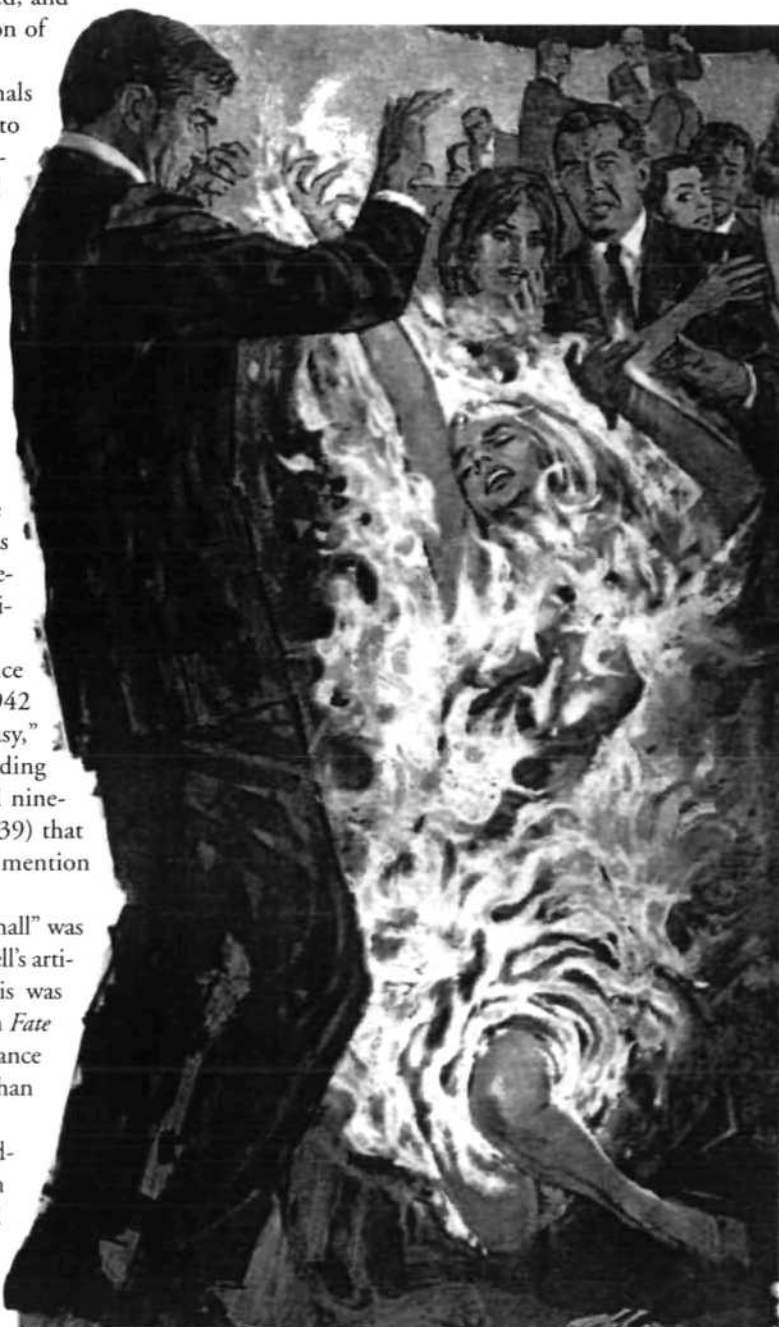
In *Great World Mysteries* Russell (1957) considerably embellished the story. The atmosphere on the dance floor is set by "Couples glided around the floor, others chatted and sipped soft drinks," the victim (still unnamed) "burst into flames bang in the middle of a dance hall" and the

remark is added that the victim didn't smoke and that she hadn't been in contact with cigarettes. Russell writes: "She roared like a blow-torch and no man could save her."

This version was probably the source for an article in *True*

"She roared like a blow-torch and no man could save her."

(May 1964) by the American writer Allan W. Eckert. He dated the accident on September 20, made the location "the midst of a crowded dance floor," let the poor girl "burst into intense



blue flames" (like a blowtorch?), made her crumple silently to the floor, and "neither her escort nor other would-be rescuers could extinguish the flames. In minutes she was ashes, unrecognizable as a human being." Then Eckert made up the first name "Leslie" for Beccles (and changed the quote again). The article was illustrated by a full page picture of a Marilyn Monroe-esque woman in a sexy pose wrapped in flames.

When I e-mailed Eckert to ask for the source of his story (which I knew originally only through quotes) he e-mailed back that he had lost his notes and didn't even have a copy of his own article.

The creator of the Bermuda Triangle, Vincent Gaddis, combines Eckert's version ("bluish flames," "within minutes a blackened mass of ashes") with Russell's *Fate* article ("middle of a dance floor"). His Beccles quote is a mix of Russell's and Eckert's versions. Gaddis plays the scholar by giving the *Daily Telegraph* reference, but judging from his text he never set eyes on that source.

Maybelle Andrews

Maybelle Andrews appears in a paperback by Emile C. Schurmacher titled *Strange Unsolved Mysteries* (1967). Schurmacher mentions six cases from *Great World Mysteries*, but neither Russell nor anyone else is credited.

Some of Schurmacher's cases are word for word identical to Russell's, some differ somewhat in wording but not in content, and he seems to mix up Russell's sources.

The story of Phyllis is transmogrified further. Schurmacher's version gives the impression that he has seen the *Daily Telegraph* story, but that he had only Russell's book on hand when he wrote it up. He doesn't mention a source at all, and has only "October" as a date. Shop manager Phyllis Newcombe, age 22 (she ran a confectionery store owned by her father), became typist Maybelle Andrews (19), her fiancé Henry McAusland became Billy Clifford (22), the Shire Hall ballroom became "one of London's Soho nightspots" and "Maybelle" burst into flames while dancing the watusi. The fire was extinguished by hands and a topcoat, but Maybelle died in the ambulance.

As poignant detail, Schurmacher pictures Billy "with his burned hands swathed in bandages" at the inquest. (*The Telegraph* does mention the fiancé helping to put out the fire but more detailed stories in other, local, newspapers say nothing about his role in extinguishing the fire.) The remarks of the coroner are somewhat expanded, but they start with "In all my experience I have never been confronted by a case as fantastic as this." The coroner's name is changed

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to James F. Duncan. Coincidentally both Russell's *Fate* article and book mention a burn victim named James Duncan from Ballina, Co. Mayo, Ireland, in close proximity, opposite column or page.

We can safely assume that no one named Maybelle Andrews died in or near London in 1938, or at the end of the 1950s, as Schurmacher later wrote for *Reader's Digest*. A search of the register of births and deaths using various spellings revealed no trace of the death of a Maybelle Andrews between the first quarter of 1936 to the last quarter of 1946 or between January 1955 to December 1960. British investigator Melvin Harris has been looking in vain for Maybelle Andrews as well. He also thinks that Maybelle is just Phyllis.

Rhythmic Rotations

The following turn on the wheel of fantasy is by Michael Harrison. In *Fire from Heaven* (1976) he writes that he takes his story about Phyllis from the *Daily Telegraph*. He even thanks the newspaper's librarian for providing him with the article. In his story he combines the blue flames and the "blackened mass of ashes" of Gaddis with the boyfriend who "tried to beat the flames out with his bare hands" of Schurmacher. Harrison lets Phyllis die in just two minutes.

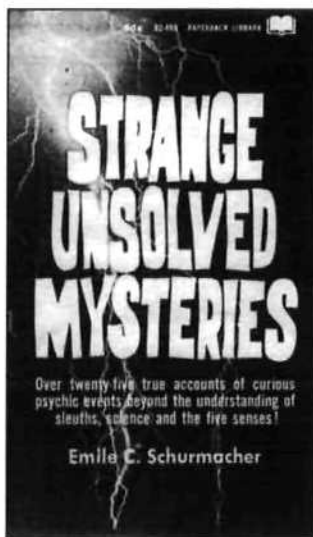
The jacket blurb of Harrison's book mentions three cases to whet the appetites of his readers, and one of them says: "Phyllis Newcombe engulfed in blue flames on a dance floor and burned to black ash in minutes." Harrison describes the party in the

Shire hall as a "weekly hop" (with quotation marks, as if he is taking it from the *Telegraph*) and he describes the inquest as a contest between a prejudiced coroner and the standfast and inquiring father. Harrison quotes Beccles too, but he copies Gaddis, rather than the *Daily Telegraph*.

Then Harrison discusses the Maybelle case and digresses on the remarkable parallels, even surmising that the mysterious fire from heaven must be attracted to rhythmically rotating movements of dancers!

Ablaze! (1995) by Larry E. Arnold is a 500-page book filled to the brim with an immense cluttered mass of descriptions and conjectures, with confused source references and without index. Arnold also describes the death of Phyllis Newcombe (on pages 200-201). He writes as if he knows what was in the *Daily Telegraph*, but he appears to rely completely on Russell, Eckert, and especially Harrison and his numerous distortions, except for the quote of "Beccles" [*sic*] which is exactly as it is in the *Telegraph* and in Russell's 1942 version. However, Arnold also read the local newspapers (*The Essex Chronicle* of September 2, 1938, and *The Essex Weekly News* of 2 and 23 September) and expresses puzzlement at the fact that the story there differs so much from Harrison's. That humans can make things up often seems too fantastic for purveyors of the paranormal.

Maybelle Andrews is mentioned by Arnold as well, now as a



case from October 1938. For Maybelle Arnold refers to a personal communication from journalist Harrison, who “remembered” the words of coroner James F. Duncan, coincidentally precisely as Schurmacher rendered them. Six lines down the other James Duncan pops up in *Ablaze!*, but this remarkable coincidence apparently didn’t ring any alarm bells with Arnold.

And so it goes on. Colin Wilson copies Schurmacher in *The Occult* (1971), Lynn Picknett (“a leading authority on the paranormal” according to the blurb) copies Harrison in *Flights of Fancy?* (1987), but locates the Shire Hall in Romford and dates Maybelle in the 1920s. Nigel Blundell summarizes Phyllis and Maybelle in precisely six lines in *The Supernatural* (1996).

In *Mysteries of the Unexplained* (1982, published by Reader’s Digest) the tragedy in Chelmsford is also copied from Harrison, with precise references to Gaddis and Eckert. In *Strange Stories, Amazing Facts* (1976), also published by Reader’s Digest, we find an item written by Schurmacher himself, captioned “Strange cases of human incendiary bombs” and adapted from his own book. Here he dates the event “in the late 1950s.”

In 1967 Schurmacher let Maybelle die on the way to hospital from inhaled smoke, but in 1976 it’s first-degree burns that were fatal even before the flames were out. One wonders why instantaneous death by first-degree burns didn’t graduate from Reader’s Digest into the medical literature.

Spontaneous Human Combustion

by Jenny Randles and Peter Hough appeared in 1992. They also mention the cases of Phyllis and Maybelle, and they say that they cribbed the whole story from Harrison. That’s only partly true: their version of Billy Clifford’s testimony is straight out of *Strange Stories, Amazing Facts*, and their date “late 50s” comes from the same uncredited source.

Randles and Hough use the cases of Phyllis and Maybelle to surmise that music and dance can attract dangerous kundalini energy. They do not consider that surely billions of energetic dances have been performed in the twentieth century alone without the dancers bursting into flames.

It was the Dutch translation of the Reader’s Digest 1976 book (lacking any references whatsoever and omitting the first-degree burns) that formed the inspiration for a column in *Flevo-alarm* of June 1991, the newsletter of the fire brigade of Lelystad, and hence the source of a 1999 discussion in a magazine dedicated to the Dutch language.

The True Story of Phyllis

Local newspaper accounts of the tragedy of Phyllis yield a completely different picture of what happened.

The English soccer season started again at the end of

August 1938, and the Chelmsford City Football Club played its first match on Saturday, August 27. The C.C. Supporters’ Club organized a dance party for the occasion in the venerable Shire Hall (no “weekly hop” as Harrison imagined).

The mayor of Chelmsford and other town dignitaries graced the festivities. Among the 400 attendees was Phyllis Newcombe and her fiancé Henry McAusland (“Mack” to his friends). Phyllis had put on her best dress. It resembled a crinoline, billowing out and sweeping the floor and was made of white tulle with satin underneath and a dark blue waist sash.

When the party was over at midnight, Phyllis and Mack stayed a bit longer to talk and to avoid the rush of the departing revelers, but then they left too. Mack walked a few paces in front of Phyllis, but when he had reached the staircase (the ballroom was at the first floor of the Shire Hall, i.e., second floor in U.S. parlance), about fifteen feet from the ballroom exit, he heard Phyllis scream behind him. He turned around and saw the bottom front of the tulle dress burning very brightly and furiously.

Phyllis ran back to the ballroom, where about twenty people were talking together in small groups. They saw her stumble inside, all ablaze, collapsing in the entrance. Mr. Herbert Jewell, one of C.C.F.C.’s directors, immediately took action. He and five others rushed to the rescue and wrapped her in coats, getting singed eyelashes, eyebrows, and cheeks in the process. An ambulance was called, which arrived in twenty minutes, and Phyllis was taken to Chelmsford Hospital. She was diagnosed with serious burns on her legs, arms, and chest.

At first she seemed to be making quite good progress (her sister Edna, now living in California, tells of Phyllis drinking champagne), but the wounds became septic and led to pneumonia. And that soon killed her. Even now, in the era of antibiotics, death due to sepsis is a dreaded result of serious burn wounds. Phyllis died on Thursday, September 15, 1938. The inquest was held on Monday, September 19, in the same Shire Hall, which had been a Crown Court since 1791.

Immediately after the accident it was conjectured that the dress had caught fire through contact with a cigarette or a lighted match, thrown down from a higher place above the stairs. But witnesses hadn’t seen anybody there, and moreover Phyllis’s father, George, had been experimenting with the tulle and he had found that it wouldn’t catch fire by contact with a burning cigarette, let alone by a grazing contact such as with a falling cigarette end or by the hem of the dress sweeping over it. It’s nearly impossible to set fire to a piece of cloth with a lighted cigarette.



Phyllis Newcombe

George Newcombe repeated his test in front of coroner L.F. Beccle (not "Beccles" as reported by the *Daily Telegraph* and all others). McAusland conjectured that the dress might have acquired extra combustibility from the vapors of a chemical cleaning agent used six weeks earlier, but the coroner disagreed with this theory.

A match that would have been forcibly thrown from a higher place (a balcony over the staircase) would probably be

Whoever tries to investigate or explain stories of spontaneous human combustion (or other tall tales) should take into account that these stories can be distorted enormously, not only by eyewitnesses and newspaper journalists, but foremost by creative writers.

out before it reached the floor. Also, Phyllis's dress caught fire on a spot not directly underneath that balcony. Beccle conjectured that the fire probably was caused by a burning match on the ground.

Now how could a burning match be lying on the ground? I have to do a little guessing here. Smoking was not allowed in the ballroom, but the normal behavior of smokers is to light up as soon as they leave a non-smoking area (they don't drop many cigarette ends then). They light their cigarettes with a match and extinguish the match, for example with a habitual wrist movement and then drop it unthinkingly. The match will go out immediately when it hits a stone floor.

However, when the match falls on a somewhat softer surface it occasionally stays burning for up to five seconds. The floor at the exit of the ballroom was described by the coroner as made of rubber, and a witness testified that a lighted match on the floor could go on burning. If my conjecture is correct, the source of the fire was a match thrown down by someone who walked at most five steps in front of her. Phyllis was an indirect victim of nicotineism.

Beccle asked whether a burnt match was found, but police constable Thorogood stated that he hadn't found any. He also hadn't found any cigarette butts where Phyllis's dress caught fire.

This isn't very remarkable. Immediately after the accident there must have been quite a few people passing the spot, coming and going, and an already completely burnt match can easily have been trampled completely, or alternatively, the match can have been displaced as the hem of Phyllis's dress swept over

it. It is a common feature of fires that their precise source can't be found.

So, even though there is an obvious explanation for the accident, it remains a peculiar coincidence for which there is only indirect proof: the place where the fire was first seen on the dress (in front, near the ground), the fact that given the quick spread of the fire it must have started right there and then, and the fact that the dress could only catch fire by contact with a flame. Coroner Beccle commented: "In all my experience I have not met anything so very mysterious as this." Both local newspapers gave the same version of the quote.

It stands to reason that I am not the first who has tried to guess what precisely happened. Possibly Phyllis knew too. In the hospital Mack asked if she knew the careless devil that had thrown the cigarette end. She answered: "What does it matter as long as I get right again?" This answer might suggest that she knew what must have happened, but that she was such a sweet person that she didn't want to say.

Phyllis was buried on Wednesday, September 21. Many people attended, both at the service in the cathedral and at the cemetery itself. The *Essex Weekly News* reported sixty floral tributes. The accident had been an enormous shock to Phyllis's parents, who were on vacation at the beach with Edna and possibly her three brothers too. Mack was killed while serving the RAF as a pilot in 1943. Phyllis's grave is unmarked, and the official history of Shire Hall describes the incident without mentioning her name.

Fiery Trident from Heaven

The Phyllis case of myth-mongering doesn't stand alone. During my investigations I stumbled on other ludicrous and demonstrably made-up SHC stories.

Take, for example, the case of Willem ten Bruik. Russell doesn't mention him in 1942, but he writes in 1950 that "a Dutchman Willy Ten Bruik had been lugged out of his car near Nimegen [*sic*]. Willy was a cinder. The car was little damaged. . . ." The source was "a translated report taken from an unnamed Dutch paper." It's not clear

whether he received the report in April 1938, or whether that was the time of the event. In Russell's book it is the latter, and he says that it was "a datum mailed in 1941." This is curious because at that time Holland was occupied by the Germans, who were at war with the British (among others) and mail service to the United Kingdom was definitely below standards.

Gaddis takes from an article by Michael MacDougall in



The staircase at Shire Hall, where Phyllis Newcombe allegedly burst into flames.

the (Newark, N.J.) *Sunday Star-Ledger* of March 13, 1966, the information that one William ten Bruik died in a Volkswagen, and that the accident happened on April 7, 1938, in Nijmegen (near the east border of the Netherlands). This is strange for three reasons.

In the first place Ferdinand Porsche's design for a new type of car was revealed for the first time in the summer of 1938 in New York, and on July 3, 1938, the *New York Times* coined the word "Beetle" for the car which was then officially known as KdF-Wagen. The first stone for the factory was laid on May 26, 1938, by Hitler himself, but civilian production only started after the World War, and only in 1947 were the first fifty-six Beetles delivered to the Dutch importer.

In the second place the name ten Bruik doesn't occur in the Netherlands, at least not in telephone books now in use. There are many "ten Brink" and a few "Bruikman," but no ten Bruik. The Dutch word *ten* suggests a location (like *brink* which means village square) and Bruik means usage, so by its formation the name is odd.

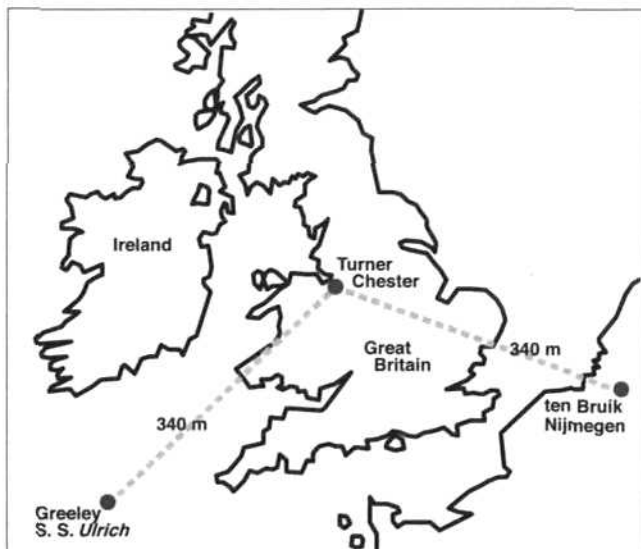
In the third place investigations by municipal authorities, police, and newspapers in the neighborhood of Nijmegen have not found a newspaper story or a registered death that corresponds to this case. These authorities know the story, because every now and then they are questioned about it. The first such question was asked by UFO researcher Philip J. Klass in 1967, who was checking an embellishment of the MacDougall story as told in a UFO book. Ever since then helpful Dutch officials have been searching old newspapers and archives to no avail.

The story of Willem ten Bruik is told in connection with two other burnings in vehicles, one in Upton-by-Chester near Liverpool and the other involving helmsman John Greeley aboard the S.S. *Ulrich* in the Irish sea. The special thing about these cases was supposed to be that they happened at exactly the same time: 1:14 P.M. in the Irish Sea, 2:14 P.M. in Upton-by-Chester, and 3:14 P.M. in Nijmegen; at least that is what the UFO book said. How events presumably known only by their results can be timed so exactly is a miracle in itself.

In Upton-by-Chester the victim was called George Turner. In reality it was Edgar Beattie, around 5 P.M. on April 4. The April 7 date belongs to the issue of the *Liverpool Echo*, the source for Russell's report on this. In *Fate* the ten Bruik story follows the Upton-by-Chester report, accompanied by the indication "same month, same year," and that was all MacDougall needed to assert a miraculous coincidence. Schurmacher mentions the Beattie case too (with the *Daily Telegraph* as reference) but he provides the victim (unnamed by Russell) with the name A.F. Smith. Schurmacher seems to like the middle initial F. This made Harrison point out the remarkable coincidence of two similar accidents on the same spot: another proof of the strange pattern-seeking behavior of the fire from heaven.

Whatever happened in the Irish Sea on April 7, 1938, it couldn't have been aboard the S.S. *Ulrich*, because that ship never existed, as Philip Klass established. Larry Arnold writes that he couldn't find any deaths of Turner and Greeley in British newspapers around that time.

The simultaneity of these events is also problematic: the



The "Fiery Trident," a "mysterious" triangle of death.

Irish Sea has the same time zone as Greenwich, and before WWII, Dutch summer time was only twenty minutes ahead of Greenwich, not a full hour.

Harrison exaggerates this story even further. He blames Russell that he missed a curious geographical coincidence related to this triple death. This shows that Harrison reads things in Russell's work that simply aren't there, because Russell didn't mention Greeley or the S.S. *Ulrich*. Harrison claimed that the three accidents happened at the vertices of a giant equilateral triangle, and that the names of the spots (Ulrich, Upton, and Ubbergen near Nijmegen) also start with the same sound.

Then Arnold told Harrison that equilateral triangle wasn't what the map said. The S.S. *Ulrich* would have to have been a few miles west of Le Mans for that, deep inside France. *Fortean Times* editor Bob Rickard made fun of the dubious "same sound" theory. Harrison changed in the next printing *equilateral* to *isosceles*, by moving Nijmegen to the southwest of the Netherlands, the neighborhood of Antwerp. He remarked that the three names really had the same "oo" sound, because of the dialect near Chester. Unbeknownst to him the Dutch deviously went on pronouncing the first letter of Ubbergen like the "ou" in *double* or the "e" in *butter*.

I will leave now the discussion of the mysterious trident of fiction that struck Earth on that memorable April 7, 1938.

I wanted to illustrate that whoever tries to investigate or explain stories of spontaneous human combustion (or other tall tales) should take into account that these stories can be distorted enormously, not only by eyewitnesses and newspaper journalists, but foremost by creative writers. They will change many details, leave them out or add them, and make up names and dates. Moreover they copy each other—often without mentioning their sources—so the distortions accumulate.

Bookstores are filled with good fiction, and these twisted, illogical, horror stories about so-called miraculous events couldn't be peddled to the public if the authors didn't pretend that it all had actually happened.

I see them as ghouls preying on the death and misery of other people to earn money and fame or convert others to their silly superstitions. They should let the dead rest in peace, or rather preserve their memory as they really were.

Acknowledgments

The search for the truth of the Phyllis case has been a joint international effort of many helpful skeptics and others. The author wishes to thank: Mike Ashley, Henriette de Brouwer, Andries Brouwer, Scott Campbell, Edna Conolly (née Newcombe), Peter van Dijk, Marcel van Genderen, Mike Hutchinson, Marcel de Jong, C. Kostelijk, Dennis K. Lien, Clare and Ian Martin, Edna Newcombe (sister in law of Phyllis), Joe Nickell, Ed Oomes, H. Rullman, Ranjit Sandhu, Andy Sawyer, Margareth Schroth, and Wayne Spencer.

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All sources involving Phyllis Newcombe are reproduced verbatim in www.skepsis.nl/phyllisdoc.html. □

WORLDS SKEPTICS CONGRESS from page 9

in fifteen years of give and take with the Chinese that political issues were injected into the proceedings. It emphasizes to us how fearful they are of the Falun Gong as a possible source of political opposition.

At this Congress there were magicians galore, including Steve Walker and Peter Rodgers from Australia, and James Randi and Bob Steiner from the U.S. They regaled the audience with card tricks and other sleight-of-hand demonstrations and kept the fun at high peak, especially at the gala final Banquet and Boat Cruise of beautiful Sydney Harbour.

Of special interest is the fact that CSICOP bestowed "Distinguished

Skeptics" awards to Barry Williams for his yeoman service to organized skepticism, Lin Zixin of China in absentia, paranormal sleuth Joe Nickell for his investigations of myths, frauds, forgeries, and hoaxes, and a "Public Education in Science Award" to Richard Wiseman of the United Kingdom. The Australian Skeptics conferred the "Skeptic of the Year" and "Bent Spoon" awards to their own—I observed that a "Triple-Bent Spoon" perhaps should have been awarded to Australian émigré Rupert Murdoch, for the media drivel that he has been selling worldwide.

Australia is a highly secular society; it has not experienced quite the intensity of the spiritual-religious-paranormal craze that has swept the U.S. Richard Lead

quipped at one point that there was a significant difference between Australia and the U.S.: England sent its prisoners to colonize Australia and its religious dissenters to settle in America—and that he preferred the former.

Plans are underway to convene the Fourth World Skeptics Congress in Los Angeles in 2002. CSICOP has helped create 100 skeptics organizations in thirty-five countries and several dozen magazines, and these are growing in number. We have helped crystallize the current scientific response to the rising tide of irrationality. International conferences are not only highly entertaining but extremely useful for they allow skeptics to meet with others and to share research findings about the plethora of weird claims constantly pouring forth. □

Darwin in Mind

'Intelligent Design' Meets Artificial Intelligence

Proponents of "Intelligent Design" claim information theory refutes Darwinian evolution. Modern physics and artificial intelligence research turns their arguments on their head.

TANER EDIS

Science no longer treats nature, particularly life, as a supernatural design. Today, the very mention conjures up images of young-Earth creationists with their bizarre scriptural literalism. Even the interesting questions creationists raise (Edis 1998a) are overshadowed by the weirdness produced by leaders such as Henry M. Morris, who can—with a straight face—go on about Satan using psychic powers to deceive Eve (1993).

There are, of course, more liberal views. Theologians interpret evolution as a progressive spiritual development, the creative influence of an infinite God pouring out onto a finite world (Haught 1999). Others speculate about whether the accidents of evolution were supernaturally tweaked to

ensure we turn up (Peacocke 1986), or if evolution was set in motion by a creative purpose (Wright 2000). Meanwhile, biologists work with blind mechanisms, and any "progress" in evolution is an artifact of the fact that life started out simple (Nitecki 1988). Liberal notions of design are relatively harmless, mainly because they are only loosely connected to modern biology.

Lately, an "Intelligent Design" (ID) movement has been emerging, trying to steer a course between the inconsequential handwaving of the liberals and the lunatic literalism of the creationists. It too promises more than it has delivered. Phillip Johnson, perhaps their most prominent spokesman, forcefully *condemns evolutionary naturalism* (1991, 1995) but presents no serious alternative. Michael Behe (1996) claims instances of "irreducible complexity" in biology, which adds up to little more than an old-fashioned incredulity about achieving complex interdependent structures incrementally. The effect of ID on mainstream science has been negligible.

Even so, ID has scored a few philosophical points. Defenders of evolution often hope a tame science and a defanged religion can peacefully occupy separate spheres. Science, we declare, is "methodologically naturalistic," considering only naturalistic explanations while saying nothing about any deeper supernatural reality (Pennock 1996). But intelligent design is a straightforward fact claim, one which is true about those objects we make ourselves. That an intelligent agent designed some aspects of nature is also a legitimate hypothesis. If science can say nothing about the probable truth or falsity of such a claim, there must be something wrong with our understanding of science. So ID advocates correctly argue that science cannot be restricted to a predefined set of naturalistic possibilities (Moreland 1994). A theoretically sophisticated, empirically well-anchored ID hypothesis can be a serious scientific proposal.

But then the problem is finding such a proposal. Ineffectual complaints about evolution in the Johnson and Behe style are not enough, so skeptics easily dismiss ID as thinly disguised creationism.

Intelligent Design and William Dembski

Enter William Dembski. Already known as one of the better ID proponents, he has recently gathered his arguments in a book that claims to put ID on a solid footing (Dembski 1999). Surprisingly, he is often correct. Though dead wrong in his overall conclusions, he makes interesting mistakes, and his errors highlight how powerful an idea Darwinian evolution is, in biology and beyond.

Dembski sets out to fashion a workable notion of supernatural intervention. One difficulty is that a miracle sounds like an all-purpose excuse rather than a genuine explanation. And even if we allow a design hypothesis in analogy to human creativity,

this is easily abandoned at the first hint of a naturalistic alternative. Dembski therefore proposes to detect intelligent action in a way that avoids becoming an excuse or a weak analogy. We distinguish design from accident, he says, by seeing if our data exhibit *contingency*, *complexity*, and *specification*.

Contingency means an information-conveying system must allow many possible arrangements. Not all order is evidence of purpose. Objects we drop fall rather than drift off in random directions, but this only manifests a simple physical law. In contrast, it is as easy to type "urqgkwffferj . . ." as to type a real argument; an isolated string of nonsense-DNA is no different in *chemical stability from one that codes for a useful protein*.

To rule out pure chance taking over in the absence of simple constraints, Dembski demands *complexity*. A world of physical laws and random events will occasionally produce something that makes sense, like a monkey at a typewriter banging out "hello world." But the longer and more complex the message, the more unlikely this is.

Specification is crucial for telling what sort of data is meaningful. Finding π encoded in a radio signal from space would suggest an intelligent source, while any particular random string, though just as improbable, is merely noise. We must be able to specify meaningful patterns before the fact; otherwise, given thousands of crank-hours at work, we can find messages in anything, such as a plan of history in the Great Pyramid.

Dembski argues that such criteria can be made rigorous (1998). Inferring design—or distinguishing messages from noise—is an important problem, from everyday interpretation of ambiguous data in a social context to SETI research. For example, astronomers first wondered if periodic signals from pulsars indicated alien life, but the signals were too simple and soon a physical explanation was found. Dembski formalizes requirements like complexity, defining a procedure to detect design.

Dembski's information-theoretic work is fairly respectable.¹ The controversy begins when he applies his criteria to biology, finding that life exhibits just the sort of specified complexity that is supposed to signify intelligent design. ID proponents claim to improve on the classical design argument by providing a rigorous procedure to identify a particular sort of order indicating intelligent origin. When tested on objects we know the origins of, they say, this procedure reliably sorts out artifacts from the haphazardly cobbled together, even when we know little about the functions of the artifacts. So it looks like organisms are also, at some level, products of design.

ID needs more, since its criteria might fail to distinguish between explicit design and evolution—both may generate specified complexity (Elsberry 1999). ID proponents attack this in two ways. One is to produce the usual litany of alleged failures of Darwinian "macroevolution": the origins of life, the Cambrian explosion, Behe's "irreducibly complex molecular machines," and so forth. This is the tedious, disreputable side of ID. The second way, however, extends the information-theoretic argument, promising to show why a Darwinian

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mechanism *cannot* create specified information.

Darwinism must fail, Dembski says, because information is conserved. Unintelligent processes that transform and transmit information can never add new content. Consider a message string, "3:45 P.M." This might be translated into "15:45"; no information is gained or lost thereby. Or it might be degraded by a process that rounds times to the nearest hour, leaving "4:00 P.M." If the message was input to a computer program that e-mailed meeting times to a department staff, it might be converted to "Next department meeting: 3:45 P.M.," but the additional comment, though useful, is not really new. Such a program could only be used to transmit meeting times; this information is built into its initial design.



Random processes do no better. A noisy channel might, with a lot of luck, produce "Christmas party: 3:45 P.M.," but there is no reason to trust it. Variation-and-selection can add no meaningful novelty to a message because all it does is reveal information in pre-programmed selection criteria. According to ID, the creativity producing information-rich structures like living beings cannot be captured by blind naturalistic processes.

Physics and Intelligent Design

To see what is wrong here, we can cast ID as a physical claim. First, take a universe with dynamical laws like those of

Newtonian physics. These conserve information at a microscopic level; a complete description of particle positions and velocities at any time also determines all past and future states. Following Dembski, we might suspect that if complex

structures appear at some point, this is not a genuine novelty, since these were implicit in previous states.

However, such a scenario does not preclude evolution. It suggests a clockwork deism, where the information provided through the initial design unfolds in time, manifesting in complex macroscopic structures. This still leaves the question of how these local pockets of specified complexity are assembled. Variation-and-selection may still do the job.

This issue is related to one of the classic problems of physics: understanding an irreversible macroscopic world, which does not appear to conserve information, when our basic microscopic dynamics are reversible. Part of the answer comes from realizing we never have a complete description of any system. What approximate knowledge we have rapidly becomes obsolete due to dynamical chaos, as even the smallest error grows exponentially. We can only keep track of statistical properties of systems, through macroscopic variables like temperature, which behave irreversibly (Gaspard 1992). For

example, if we bring objects at different temperatures into contact and let them reach equilibrium, they will end up the same temperature. No measurement can recover their original temperatures, and they will not spontaneously acquire different temperatures again.

It turns out that all that is needed to add the required flexibility to a machine is to let it make use of randomness. A random, patternless function can be used to break out of any pre-defined framework. It serves as a novelty-generator. So if all we claim is that humans are flexible in a way not captured by rules, randomness alone does the trick.

Such loss of information does not challenge ID; it even plays into creationist suspicions that the second law of thermodynamics precludes evolution. But the same physics also underlies the emergence of order from chaos. If a system behaves such that its maximum possible entropy increases faster than its actual entropy, it will be driven away from equilibrium. This creates space for order to form. In particular, Darwinian processes can take hold: simple replicating structures can mutate and diversify, exploring more complex configurations along the way. All this takes place under ordinary physics, without outside intervention (Brooks and Wiley 1988, Edis 1998a).

The information-based arguments of ID, then, allow design to be confined to setting up initial conditions. Hence they are too broad to support a critique of evolution. In fact, the situation is worse, as the deistic view is itself highly dubious.

Focusing on microscopic information and deterministic dynamics can give the impression the physics of complexity is a nuisance foisted on us because of our imperfect knowledge. Actually, much of what we have learned about complexity is valid under a wide range of dynamical laws and initial conditions: concepts like irreversibility, self-organization, and Darwinian variation-and-selection are not very sensitive to the underlying microscopic physics. So studying complexity requires more than traditional physics, calling on fields such as biology and computer science (see Badii and Politi 1997). What exact history is realized in a universe does, of course, depend on microscopic details. But just obtaining local pockets of specified complexity is not too difficult. When a variety of dynamical laws can generate complexity from random initial conditions, it is quite a leap to conclude there must be an intelligence behind it all.

Modern physics provides even less of a peg to hang ID upon. With general relativity, random boundary conditions are no longer tucked away in the distant past; a black hole is as much a source of true randomness as the Big Bang (Hawking, in Hawking and Penrose 1996). And quantum mechanics is notorious for its pervasive dynamic randomness.

Randomness also makes physical systems haphazardly explore their possible states, leading to irreversibility. And now, it makes no sense to speak of predetermined order. Random data is patternless (Chaitin 1987), so no cause behind it can be inferred; certainly not intelligent design.

Enter Artificial Intelligence

Our physical world is a realm of accidents, of seething, mindless dynamism—the unpredictable twists and turns of history. Yet expecting a combination of laws and chance, however elaborate, to be genuinely creative may be too much. ID, after all, is not just an exercise in information theory; it also draws upon deep-seated intuitions that machines cannot display creative intelligence. Without some account of the place of intelligence

within nature, it is still possible to suspect naturalistic explanations of complexity overreach.

Many a science fiction tale tells how a hero defeats a computer by posing a problem it was not programmed to deal with. It then starts saying “does not compute!” in a synthetic yet anxious voice, and finally goes up in smoke. Unlike the rule-bound machine, however, we think human intelligence at its best is flexible, innovative. We confront situations beyond what we have prepared for, and if we do not always succeed, we still often come up with novel approaches to the problem.

As Dembski’s argument that information is conserved makes clear, it is difficult to see how new content can be generated mechanically. Artificial intelligence (AI) researchers ask us to imagine machines that perform a variety of complicated tasks, learning about and responding to their environment in sophisticated ways. But if these machines remain within the bounds of their programming, it is natural to attribute intelligence not to them but to their designers. ID voices this suspicion: that no pre-programmed device can be truly intelligent, that intelligence is irreducible to natural processes.

Such intuitions underlie not only ID but some respectable criticisms of AI, including those based on Gödel’s incompleteness theorem. This has recently been championed by Roger Penrose, the eminent physicist (1989, 1994); Gödel’s theorem is attractive because it reveals how any rule-bound system has blind spots because it is unable to step outside of a pre-defined framework. And though Dembski considers Penrose to be insufficiently anti-naturalistic, ID requires at least some such critique of AI to be sound.

It turns out, however, that all that is needed to add the required flexibility to a machine is to let it make use of randomness. A random function, because it is patternless, can be used to break out of any pre-defined framework. It serves as a novelty-generator. Plus we can prove a “completeness theorem” showing all functions can be expressed as a combination of rules and randomness. So if all we claim is that humans are

flexible in a way not captured by rules, randomness alone does the trick. *There is no other option* (Edis 1998b).

Now we need to use randomness for actual creativity. And we already know an excellent mechanism for putting bare novelty to work: natural selection. Dembski's claim that randomness does not help create content is incorrect; a Darwinian process is different from altering a message through fixed selection criteria. *Everything* is subject to random modification—there are no predetermined criteria; nothing but mindless replication and retention of successful variants.

A fuller understanding of something as convoluted as human creativity is a long way off. But fundamental objections like those ID raises have largely been overcome. It is almost certain that randomness and Darwinian processes are vital in the workings of our brains. *So our current sciences of the mind are full of ideas like neural Darwinism, Darwin machines, memes, and multiple levels of Darwinian mechanisms depending on competing processes to assemble our stream of consciousness* (Dennett 1995). Variation-and-selection, today, is beginning to be vital for theories of mind as well as biology.

A Darwin Detector

What, then, are we to make of ID? It now seems like a bad argument, concocted of pointless complaints against evolution on one hand, and flawed intuitions about information and intelligence on the other. Discarding ID, however, would be hasty. Important theories about the world convince us by ruling out serious alternatives. Historically, evolution took shape against then-compelling notions of design. ID may be wrong, but it is also a decent update of Paley with a real intellectual appeal. *Its errors provide a useful contrast, highlighting what is correct in evolution.*

Confronting the information-based arguments of ID is especially helpful in revealing how profound an idea evolution is. As ID proponents suspect, Darwinian thinking is not confined to biology; it anchors a naturalistic understanding of all complex order, even including our own intelligence. Hence today, Darwinism *is* central to a thoroughly naturalistic picture of our world.

So in defending their religious views, ID proponents pick the correct target. They are also right to emphasize how designed artifacts and living things are similar. And Dembski's criteria of contingency, complexity, and specification do reveal a special kind of order they share. The irony is, what these criteria actually detect is that there were Darwinian processes at work. The complexity of life is directly produced through evolution, but an artifact also is an indirect product of the variation-and-selection processes that must be a part of creative intelligence.

Defenders of evolution can now allow themselves a wry smile. Intelligent Design is as close to respectable as anti-evolution intu-

itions are likely to get, and Dembski has made a good stab at making ID rigorous. And what we end up with is a Darwin detector.

Note

1. Dembski's work has been criticized (Fitelson et al. 1999), but these objections do not seem fatal. In any case, Dembski's criteria are not signs of design as he understands it, even if we were to ignore all such criticism.

**Darwinian thinking is not confined to biology;
it anchors a naturalistic understanding of all
complex order, even including our own intelligence.
Hence today, Darwinism *is* central to a thoroughly
naturalistic picture of our world.**

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A Bit Confused

Creationism and Information Theory

.....

The argument of some creationists that modern information theory refutes Darwinian evolution is based on a confusion between two distinct information concepts. At the heart of the Darwinian thesis is not information, but complexity.

DAVID ROCHE

In recent years, the notion of “information” has crept into the arguments of creationists and other critics of evolution, particularly among proponents of Intelligent Design (ID) (see Edis, this issue). According to such arguments, information theory refutes Darwinian evolution. Carl Wieland (1997) sums up the argument nicely.

What mechanism could possibly have added all the extra information required to transform a one-celled creature progressively into pelicans, palm trees, and people? Natural selection alone can't do it—selection involves getting rid of information. A group of creatures might become more adapted to the cold, for example, by the elimination of those which don't carry enough of the genetic information to make thick fur. But that doesn't explain the origin of the information to make thick fur. [And] mutations ... are accidental mistakes as the genetic information ... is

copied from one generation to the next. Naturally, such scrambling of information will tend to either be harmful, or at best neutral. . . . Rather than adding information, they destroy information, or corrupt the way it can be expressed (not surprising, since they are random mistakes).

In other words, so goes the argument, the Darwinian process is inadequate for explaining the origins of biological (e.g., genetic) information. Natural selection cannot produce any new information; it merely shuffles or in some cases eliminates the information that was already there. And mutation cannot create new information either, because mutation is essentially a random process. So although variation occurs in nature and natural selection may operate on this variation, evolution leads to neutral or even degenerative change. It does not provide the “progressive” component required to explain the origins of organisms with lots of information. Have you spotted the flaw in this argument? It’s not as simple as you might think.

In one sense, proponents of this argument are right. Both natural selection and random mutations can be thought of as leading to a reduction in information. However—and herein lies the flaw—the *type of information is different in each case*. Information comes in different forms, so we need to be clear regarding what sort of information we are talking about.

One type of information we might call *Shannon information*. This is the type of information concept introduced by the Bell engineer Claude Shannon in 1948 when he laid the foundations of the modern science of information theory (Shannon and Weaver 1949). Shannon defined information in terms of reduction in uncertainty. So if I sent you the string of binary digits “010,” I have specified one of eight possibilities. Assuming equiprobable digits, I have reduced your level of uncertainty by a factor of eight. Information is typically measured as the base-2 logarithm of the reduction in uncertainty, which in this case translates into three bits of information.

The Shannon information content of any system can be thought of as the reduction in uncertainty resulting from a complete specification of that system. In other words, you can think of Shannon information content in terms of the length of a concise and fully detailed description of the system. Such a definition therefore accounts for redundancy. A book consisting only of the letter “A” repeated 100,000 times is easy to describe. It has lots of redundancy and therefore little Shannon information. If we converted it into a computer file and ran it through a compression algorithm, we would end up with something much smaller than what we started with. A book of 100,000 completely random letters, in contrast, has no redundancy and therefore lots of Shannon information. There is no shorter description of a book of random letters than the book itself, so running it through a computer compression algo-

gorithm has little effect on its size. Shakespeare’s play *The Tempest* also contains about 100,000 letters. Its Shannon information content is intermediate between the book of A’s and the book of random letters. If we ran it through a computer-compression algorithm, we would end up with something somewhat smaller than what we started with, but not drastically so. *The Tempest* contains more Shannon information than a book of 100,000 A’s but less Shannon information than a book of 100,000 random letters.¹

Mutation is a random process, and random processes do not, at least on their own, generate complexity. Natural selection, however, is not a random process. It is an ordering process, creating structure from noise and increasing the degree of regularity in the biological system.

Another type of information concept is complexity. Physicist Murray Gell-Mann has helped in recent years to clarify this concept (Gell-Mann 1994; 1995). According to Gell-Mann, you can think of complexity as a measure of how difficult it would be to describe the *regularities* of something in complete detail. Mathematically, it is the difference between something’s maximally compressed Shannon information content and its “incompressible” information content—the information content of those elements of the system that are truly random (Gell-Mann and Lloyd 1996). A book of 100,000 A’s has little complexity. It does not have much incompressible information, while its compressible information is highly compressible. The regularities of the book can be completely described in one short sentence (“A book of 100,000 A’s”). A book of random letters also has little complexity. It has lots of Shannon information, but virtually all of this information is incompressible because there are no regularities to compress. In contrast, *The Tempest* has lots of complexity. It has lots of regularities (e.g., words, rules of grammar, aspects of plot development etc.) and so virtually all of its information content is compressible. Yet once fully compressed, it is still quite large.

Shannon information and complexity are quite distinct concepts. As we have already seen, various systems can be interpreted as having lots of one without much of the other. A common mistake of those attempting to use information theory to debunk Darwinian evolution is to confuse the two concepts. Dembski’s “complex specified information” is the most prominent example (Dembski 1998).

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Once we understand the difference between these two types of information—Shannon information and complexity—it is easy to see what's wrong with the information argument against evolution. If we interpret biological systems in information terms, we can see that natural selection does tend to decrease the amount of information, but only Shannon information. Natural selection simply removes some members from a population, making it more homogenous and less diverse. The resulting population is easier to describe in detail and so has less Shannon information. Conversely, mutation makes the population less homogenous and so increases the amount of Shannon information.

Looking at the amount of complexity in the biological system, however, the situation is somewhat different. Mutation is a random process, and random processes do not, at least on their own, generate complexity. Natural selection, however, is not a random process. It is an ordering process, creating structure from noise and increasing the degree of regularity in the biological system. Since complexity is simply the length of a concise description of all the regularities in such a system, natural selection, in conjunction with random mutation, can tend to increase complexity.

Whichever way we interpret the evolutionary critic, explaining the origin of biological information is straightforward. If by "information" the evolutionary critic means Shannon information, then there is very little to explain. The second law of thermodynamics will suffice. The world tends toward disorder, and this disorder is a physical embodiment of Shannon information. On the other hand, if we interpret "information" to mean complexity, then we are simply left with answering the familiar question of how the Darwinian

process could give rise to such complex organs as the vertebrate eye; a question already thoroughly dealt with by many biologists (e.g., Dawkins 1986).

The great achievement of Darwinism is not that it explains the origins of information (in the Shannon sense), but that it explains the origins of complexity. And it does so in terms of a completely material process: *random* mutation followed by *non-random* selection. Via such a process, the simple can give rise to the complex; "from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved" (Darwin 1859).

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Note

1. After writing this statement, I decided to test it empirically. I created three text files: one containing 100,000 As, another containing 100,000 pseudorandom letters, and a third containing Shakespeare's *The Tempest*. I then ran each through the compression program WinZip, and achieved compression ratios of 99.3%, 2.5% and 58.4% respectively. □

NEW WEST COAST MEDIA CENTER

We wish to announce that the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) in cooperation with our sister organization, the Council for Secular Humanism (CSH), has purchased a new headquarters building, at 4773 Hollywood Boulevard in Los Angeles. This will replace the rented quarters that we have operated out of for the past several years. It will be the West Coast branch of the Center for Inquiry, serving the needs of southern California. It will also be developed as a new national media center. It is appropriate that this be in Los Angeles—the entertainment media capital of the world.

We are very excited about what this new center can accomplish. It will focus on creating a response to the paranormal viewpoint so predominant in the media and seek to provide a scientific-rationalist alternative. We intend to create a distinctive new center, and we welcome the support of our readers as we embark upon extensive renovations.



Introducing Italy's Version of Harry Houdini

.....

At the age of thirty-two, Italian paranormal investigator Massimo Polidoro is the author of half a dozen books, performs and lectures to capacity crowds across the globe, runs a national organization of Italian skeptics, and is a hit with the Italian media. A life that may seem very complex to most is very simple to Polidoro: he is merely leading a life inspired by his boyhood hero Harry Houdini.

MATT NISBET

Most ten-year-olds growing up in Italy dream of feats of national heroism on the soccer field, with visions of professional soccer stardom dancing in their heads. But as a young boy Massimo Polidoro dreamed of magic. It all started when Polidoro saw the 1953 Tony Curtis classic *Houdini*. A romanticized version of the life and times of the legendary escape artist and debunker, the film chronicles Harry Houdini's early beginnings in show business as a dime museum performer to his ultimate (and historically inaccurate) death on stage in the Chinese Water Torture Cell. Amazed by the story of Houdini, young Polidoro developed a fascination with the paranormal. He tried bending metals like popular 1970s television personality Uri Geller, and delved

into books about telepathy and spiritualism.

Fantasy turned to skepticism at the age of fifteen when Polidoro came across the book *Journey Into the Paranormal World* by well-known Italian journalist Piero Angela. The book introduced Polidoro to the adventures of American magician James "The Amazing" Randi. The teenage Polidoro wrote to both Angela and Randi, with Randi responding by sending books to Polidoro on skepticism and the paranormal. A short time later when Randi visited Italy on a lecture tour, Polidoro met with the magician and Angela. Randi recruited Polidoro to serve for the next year as his "sorcerer's apprentice," traveling the globe testing psychics and dowzers, and working in front of television cameras to unmask mystery and trickery for global audiences.

Today, at the young age of thirty-two, life is no less exciting for Polidoro. He has built an international profile as an author, journalist, lecturer, and professional skeptic. He is co-founder and executive director of the Italian Committee for the Investigation of Claims of the Paranormal (CICAP—Comitato Italiano per il Controllo delle Affermazioni sul Paranormale), has published fourteen books, and draws packed crowds at public appearances. In August 2000, I traveled to Amherst, New York, to meet and interview Polidoro, who spent the month on a speaking tour of the United States. His first stop was at the Center for Inquiry—International, headquarters for the Committee for the Scientific Investigations of Claims of the Paranormal (CSICOP), and SKEPTICAL INQUIRER magazine.

About two inches short of six feet tall, slender with a well-groomed Don Quixote goatee, Polidoro speaks fluent English, looks younger than his years, and lacks the slightest trace of hubris or arrogance. Polidoro

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and I sat down for about an hour before his evening lecture to discuss his career and insights on the world of the paranormal.

After spending a year abroad with James Randi, Polidoro returned to Italy in 1989, and began to shop around to Italian publishers the manuscript for his first book *Viaggio tra gli spiriti* (*Journey into the Spirit World*). Polidoro encountered difficulty in convincing publishers that a book skeptical of the

paranormal would interest readers, but *Viaggio tra gli spiriti* finally made it into print in 1995, with strong sales. Polidoro was then able to follow with a series of books, all in Italian, that included *Misteri* (*Mysteries*, 1996), *Dizionario del paranormale* (*Dictionary of the Paranormal*, 1997), *Sei un sensitivo?* (*Are You Psychic?*, 1997), *La maledizione del Titanic* (*Curse of the Titanic*, 1998), *I segreti dei fakirs* (*Secrets of the Fakirs*, 1998), *L'illusione del paranormale* (*The Paranormal Illusion*, 1998), *Il sesto senso* (*The Sixth Sense*, 2000), and *Il grande Houdini* (*The Great Houdini*, 2001). His first book in English, titled *Final Séance: The Strange Friendship Between Houdini and Conan Doyle*, is scheduled to be published by Prometheus Books in the spring of 2001.

In 1989, Polidoro also teamed with Italian scientist Luigi Garlaschelli to found CICAP, and, in the first years, the duo worked tirelessly to recruit members and subscribers to the CICAP newsletter. The newsletter soon grew into the glossy bound magazine *Scienza & Paranormale*, reached bimonthly status in 1998, and today boasts about 2,000 readers. Since 1989, Polidoro has contributed over

200 articles and papers, not only to *Scienza & Paranormale* but also to the *Journal of the Society for Psychical Research*, SKEPTICAL INQUIRER, *Skeptic*, and James Randi's *Swift*. As a chief spokesperson for CICAP, Polidoro delivers about four lectures a month to crowds as large as several thousand. Polidoro earned a degree in psychology from the University of Padua in 1996 with his thesis devoted to the study of the reliability of eyewitness reports of unusual events.

Polidoro views his work with the Italian media as possibly his most important achievement. "Before CICAP, the Italian media were absolutely pro-paranormal, and rarely critical, but



Massimo Polidoro

now CICAP has grown into a friendship with many journalists," Polidoro said. He and CICAP have tried to adopt a media-relations approach that fosters a partnership with the Italian media, and makes covering paranormal claims from a critical view easy. CICAP maintains a media e-mail list and a state-of-the-art organizational Web site. "There are skeptical journalists and they are certainly supportive of our cause," Polidoro said. "But most are looking for a nice story. So if we find a way to present ourselves in a more interesting light, it can be very important."

Polidoro names alternative medicine (especially homeopathy), UFOs (specifically the ancient astronaut claims of Robert Hancock), and various miracle claims as the most frequent paranormal topics he encounters among the Italian media and public. On the miracle front, Polidoro believes that the canonization by the Catholic Church of stigmatic Padre Pio has helped reignite widespread belief in miracles. "In Italy, almost every actor and celebrity claims to have been healed at some time by Padre Pio," Polidoro said. "I think the Catholic Church might be following the New Age and coming up with more miraculous events."

Polidoro envisions CICAP's main role as "letting people have all the facts, so they can make up their mind. We are not trying to convert people. Often people are asking questions about cases that have already been solved. We are trying to give information to people." Current efforts by CICAP include increased involvement with schools, initiating programs with teachers to teach critical thinking and science via paranormal topics, and to provide books and tapes as educational resources. CICAP is also expanding its Web resources, building a Skeptic's Web dictionary in Italian, and offering the sale of books and other materials through the CICAP site. CICAP sponsors eleven regional Italian skeptic organizations, and has held a national conference every two years that features inter-

national leaders in science and skepticism. In the fall of 2000, CICAP unveiled its new national headquarters in the city of Padua. Occupying two floors of an office building, CICAP will employ three full-time staff members, several part-time staff, and dozens of volunteers. The organization bases its operations on a growing annual budget of \$150,000 raised mostly through subscriptions and donations.

I asked Polidoro if living a life inspired by Harry Houdini ever struck friends his age as a bit strange or eccentric. He claims it doesn't cause any problems. "Though my work is a very important part of my life, I have other interests. I play the piano and the guitar, and I am a big fan of the Beatles. Very rarely do I talk about paranormal subjects with my friends. Sometimes they see me on television, and they say they didn't know I do these things."

I also asked him about women his age. Did he have any thoughts on the notion that women might be more prone to belief or fascination with the paranormal? "It is possible," he answered carefully, remarking that his girlfriend might have something to say about his answer. "Maybe women are less likely to be attacking, and are not as cynical. Maybe men are interested as well but don't manifest their belief in the same way." Hmmm . . . stated like a true escape artist.

Web Resources

The Massimo Polidoro Web Site (In English and Italian) www.massimo-polidoro.com
The CICAP Web Site (In English) www.cicap.org/en/

Further Reading

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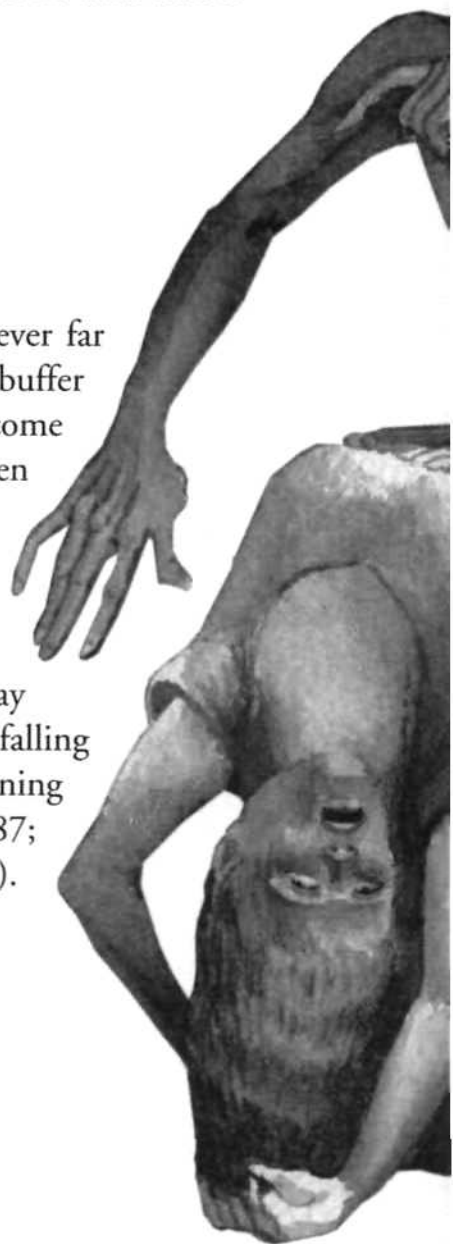
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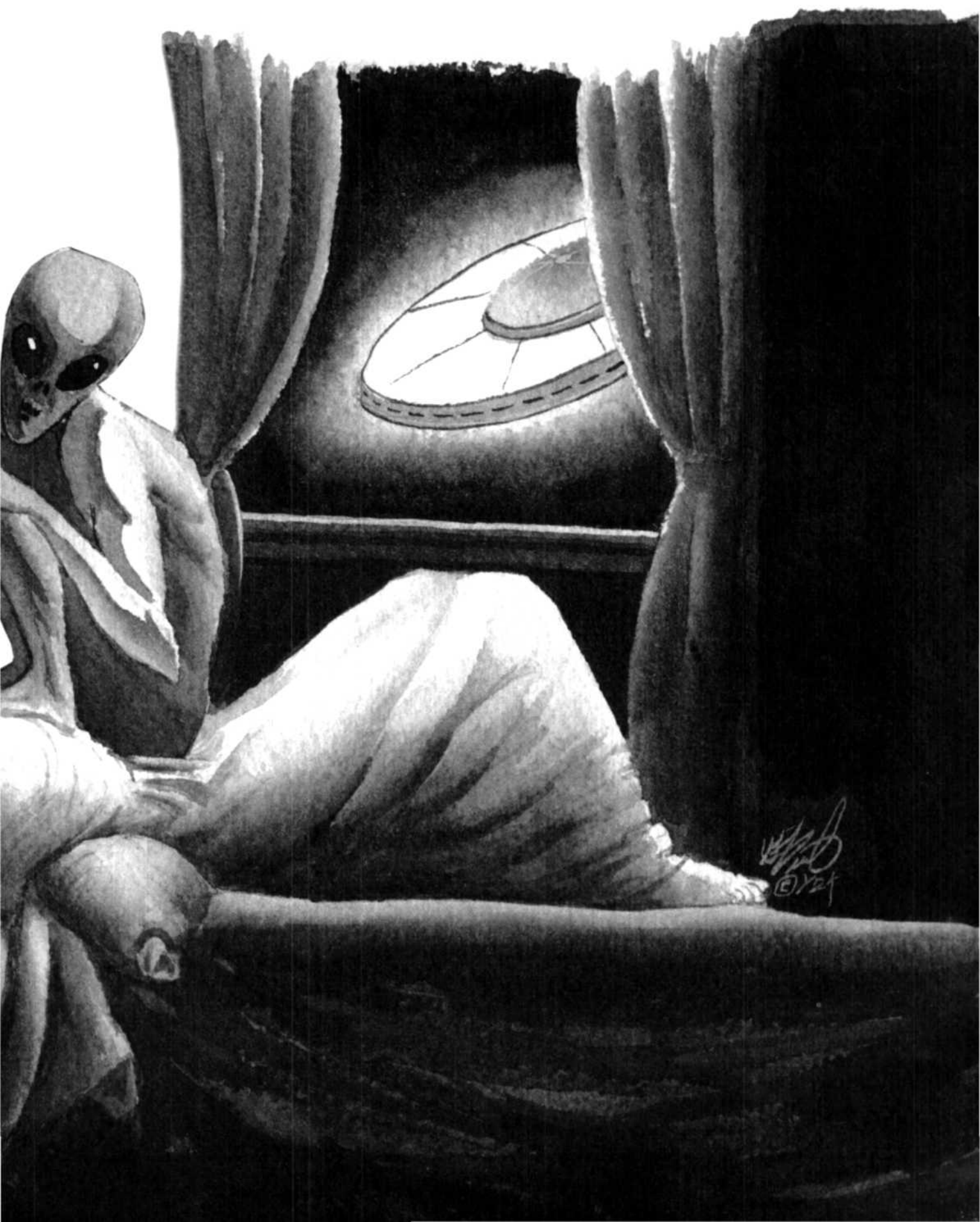
A Psychological Case Study of 'Demon' and 'Alien' Visitation

A clinical psychologist discusses a case of a depressed individual who misinterpreted hypnagogic and hypnopompic hallucinations as visitations by demons and aliens. He came close to suicide, and even considered killing his family.

ANDREW D. REISNER

As Carl Sagan suggested, we humans are never far from the realm of the irrational despite the buffer of science and reason. Normal people can come uncomfortably close to this irrational realm when they are either half awake or half asleep, and experience either hypnagogic or hypnopompic hallucinations. In these relatively common and normal experiences, a person may be temporarily unable to move, a state known as sleep paralysis, and may experience vivid hallucinations either when first falling asleep (hypnagogic hallucinations), or upon awakening (hypnopompic hallucinations) (Baker 1992, 1987; Fukuda et al. 1987; Penn et al. 1981; Liddon 1967).





It can be a terrifying experience, leaving the person wondering not only about the reality of what they have seen, but also about their own sanity. The hallucinations seem very real. This phenomenon is thought to occur due to a benign but abnormal transition between sleep and wakefulness. The victim is essentially experiencing a dream phenomenon while awake, and is unable to move, because during sleep, the body's movement is partially inhibited in order to prevent people from getting up and acting out their dreams (Liddon 1967; Dement 1976; Baker 1992). Hypnagogic and hypnopompic hallucinations are thought to be the culprit in many paranormal phenomena, including nocturnal visits from aliens (Baker 1987; Klass 1989; Blackmore 1998; Nickell 1998) and ghosts and demons (Baker 1992; Baker and Nickell 1992; Sagan 1996).

John's Case History

Ignorance of, and misunderstandings about, these types of normal hallucinations may cause unnecessary anxiety, or even play a significant role in the onset and progress of severe psychiatric symptoms, as in the case of John, a 36-year-old employed, married man. John's difficulties started innocently enough. When he was five or six years old, while trying to get to sleep, he saw a little man in his room who was about six inches tall. John saw the little man go in and out of a door in the room. Later, at age twenty-six, after reading a popular book on UFO abduction (Strieber 1987), John woke up, unable to move, and saw a four-foot-tall, gray visitor, resembling the prototypic alien described in Strieber's book. This led to some speculation on John's part that he may have been abducted by aliens, perhaps more than once. The only adverse social or psychological consequence of this experience was that when he told others about it, and his speculations, he endured some teasing.

Under stress a few years later, John had more experiences of awakening in a paralyzed state and seeing a taller, dark and menacing visitor—one so tall it reached the top of a doorway. The apparition, moreover, wore a wide-brimmed black hat and black cloak, resembling characters from movies he had recently seen depicting "Zorro" and "The Shadow." John considered, however, that the apparition "might be a demon."

Some years later things took a turn for the worse when, despite his marriage of fourteen years, John began an affair with one of his old female friends. For John this was a storybook romance. It fulfilled fantasies left over from his adolescent years. John had never been popular with women, and having a woman fawning all over him was much too great a temptation. The affair almost led to divorce, but John's wife

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finally talked him into breaking it off. John agreed, but shortly thereafter reconsidered and asked his lover to return. When she refused, John fell into a deep depression and seriously considered suicide.

John developed a friendship with Judy, a devotee of Wicca, a religion involving the worship of nature and the practice of "white magic." After long talks and the exchange of personal paranormal experiences, the two friends became convinced that John's recent visitor was a demon. Walking home late one night after one of their talks, the woman felt the sinister presence of a "demon" following her. This woman's spiritual teacher had given her two special stones, and Judy ordered the "demon" into one of the stones. Giving the stones—one white and one black—to John, she told him to send his negative feelings into the black stone, where the "demon" now resided. Not wanting "a woman to do a man's job," however, John decided to release the demon from the stone, ostensibly so he could conquer it himself. Depressed over his marital problems, and drinking excessively, John's judgment was slipping. One night he went to bed holding the stone, and on awakening, the black stone had turned green. To John this signified the possible release of the demon from the stone. He had shown his wife the black stone earlier, and she agreed that, yes indeed, the stone had turned colors. When he handed his wife the green stone and she held it momentarily, it started turning black again. This frightened her so much she gave it back to John.

John's depression worsened after asking for the demon's release, and he became suicidal. John held the stone in his hand and told the "demon" that if he would show him the best way to commit suicide, he would do whatever the demon instructed him to do. Falling asleep that night, John had a "vision" of tying his wife down and then killing her and their two children. He also assumed that this "vision" represented the demon's instructions. At first John reasoned that if he murdered his loved ones, he would then feel compelled to kill himself, thus accomplishing his suicidal objective. Realizing the insanity of this, however, John reneged on his deal with the "demon." Suicide was still on John's mind, however, and one day while riding his motorcycle down the highway at a speed of over 100 miles per hour, he envisioned himself crashing the bike into an oncoming truck. He also had considered ending his life with a shotgun he owned.

The most terrifying hallucination, however, occurred after consuming a substantial amount of alcohol along with his prescribed dose of antidepressant medication. As he was laying supine on the floor, passing out due to the beer and medication, he saw the same cloaked, dark figure with a wide-brimmed hat. This time the "demon" was bigger, taller than the door frame, and his cloak covered the ceiling. Although almost faceless, what there was of the dark, menacing figure's face came down toward John's face, as if the sinister intruder was trying to intimidate John by going nose to nose!

Following this hallucination, John was admitted for his first psychiatric hospitalization. While in the hospital he sensed the "demon" outside of the window, and felt the "demon" was angry. In his words, "the demon followed me to the hospital."

John's reports about his experiences in the hospital were inconsistent, however. At first he indicated that he sensed the demon present outside of the window while he was in bed, perhaps suggesting another hypnagogic or hypnopompic experience. During a second interview, however, he indicated that he was not in bed and was fully awake when he sensed the presence of the angry "demon" outside. In any event, it appears that prior to and during the hospitalization, he had become convinced of the reality of the demon and was considered psychotic.

Since John's first hospitalization was ineffective, about six weeks later he was admitted to a different hospital. This is where I first met and evaluated him. Fortunately, his mental state improved quickly during the second hospitalization, after he started antipsychotic and antidepressant medications. John's final psychiatric diagnosis was Major Depression, single episode, with psychotic features, along with alcohol and benzodiazapine abuse. (He had been taking a minor tranquilizer, classed as a benzodiazapine, and claimed he took it as prescribed, but he also drank eight ounces of Schnapps every day.)

Initially, it was unclear whether he might have had other episodes of severe depression. However, after additional evaluation, it appeared that no other episode of emotional difficulty could be qualified as a major depression, and that the current episode had spanned several months, and included both psychiatric hospitalizations. As an adolescent, he had become acutely upset after a girlfriend left him, and impulsively stuck a fork in an electrical outlet resulting in a severe shock. When they reconciled later in the day, his mood improved. On another occasion, when he realized that he lacked funds to complete his associate's degree, John responded by drinking excessively for a month. John's family also had a history of depression and reportedly one of his relatives had committed suicide. Whether or not he had other episodes of serious depression, it was clear that John adjusted poorly during stress, and occasionally engaged in excessive drinking.

On the second day of his second hospitalization, John was given the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), a valid objective personality test. A relatively normal profile was obtained. Although mild defensiveness was noted on the validity scales, John's depression and psychotic thinking had cleared, and he saw his unusual experiences in a more rational light. Possibly, what began as a mid-life crisis in an emotionally vulnerable, suggestible, imaginative man turned into a serious depression accompanied by a loss of contact with reality. This was fueled, no doubt, by a misinterpretation of his hypnopompic hallucinations, which had received consensual validation from his friend's paranormal interpretation of the events.

Once in a psychiatric hospital, and separated from occult and paranormal views, the concepts of sleep paralysis and hypnagogic and hypnopompic hallucinations were offered, and John readily accepted them as the best explanation for his unusual experiences. In a way, John's suggestibility was working in his favor. I had him read a few pages on the topic of hypna-

gogic hallucinations from a book on investigation and debunking paranormal phenomena (Baker and Nickell 1992), and he stated that he intended to obtain and read the entire book. On his own, John suggested that the "special stones" he had were probably made of the same material used for "mood rings," and

At age twenty-six, after reading a popular book on UFO abduction, John woke up, unable to move, and saw a four-foot-tall, gray visitor, resembling the prototypic alien described in Strieber's book. This led to some speculation on John's part that he may have been abducted by aliens, perhaps more than once.

this accounted for the color changes. John now saw clearly just how he had become a victim of misinterpretation and suggestion, and he swore it would never happen again.

At the time of his discharge from the second six-day hospitalization, John was essentially free of depression and psychosis, as well as from suicidal and homicidal thoughts. He also promised he would stop drinking and would comply with his outpatient treatment. Finally, he returned to his wife with a greater appreciation of both her and his marriage. If you were to meet John on the street today you would see him as normal and well adjusted, and would never guess that he was recently considered psychotic.

Discussion

In the world of science, an anecdotal case can never be used to prove anything, but case studies such as this are useful in illustrating unique situations involving matters that have been studied scientifically. This case in particular stresses the need for broader education regarding hypnopompic and hypnagogic hallucinations, since ignorance and misinterpretations can lead to severe emotional distress or worse. Had John not reneged on his deal with the "demon," he and his family might be dead. People would then wonder why such a seemingly normal, polite, and decent person could have done something so horrible. Fortunately, despite his turmoil and temporary loss of contact with reality, John's good judgment prevailed. Unfortunately, at times we are grimly reminded that things do not always work out as well for others.

The varied, and at times culture-bound, content of alien and demonic hallucinations provides another clue that such phenomena originate in the mind or brain, rather than being actual visitations from elsewhere. Hypnagogic images can be as simple as balls of light (Baker 1992), or as apparently nonspiritual as an electrified telephone cord (Huston 1992), "bright green frogs" (McKellar 1954, 266), "colored trees" (269), or "a ship in a storm" (270). Among a sample of Japanese, one man awoke paralyzed and ". . . saw a figure, which resembled a Buddhist image, on my stomach." People from other cultures may see "spiritual" images more in keeping with their own cultural expectations (Fukuda et al.

1987, 282). Although Siegel (1992, 89) notes some similarities in different historical culture's experience of the "succubus" variant of the nightly intruder, he explains these similarities partly in terms of the half-asleep victim's brain attempting to make sense of common physiological stimuli that occur during sleep paralysis, perhaps in combination with "a return to the frightening, looming shapes of the infant's perceptual world."

When people in different cultures are awakened, paralyzed, and see, hear, and/or feel an ominous presence, some type of explanation will always be sought by those afflicted. In different cultures, and at other historical times, hypnagogic hallucinations were considered to be attacks by spirits such as incubi, succubi, Lilith, "Mares" (Siegel 1992), or "Old Hags" (Baker 1992; Blackmore 1998). Interestingly, in the previously noted Japanese sample, 43 percent reportedly experienced an apparent variant of sleep paralysis, which was sometimes accompanied by hallucinations, and many of the subjects believed that evil spirits were involved with these attacks (Fukuda et al. 1987). Lacking accurate information about sleep paralysis with hypnagogic or hypnopompic hallucinations, it is easy to see why people look for supernatural and extraterrestrial explanations for such frightening and confusing phenomena (Baker 1992).

Belief in aliens or demons can be tenacious. Some suggest belief in aliens may, in some way, fulfill a religious need for those who have strayed from the conventional religious path (Kurtz 1991; Sagan 1996). Others note that belief in demons, and in the efficacy of exorcism, strengthens people's belief in the conventional religions (Spanos 1996). When religious and quasi-religious beliefs become involved, with their attending implications for the meaning of life, and hopes for an afterlife, the ideological and emotional stakes can become very high, and these beliefs, and associated concepts, can become so firmly entrenched that they are highly resistant to modification (Kurtz 1991).

Conclusions

But what price might people pay when they are unaware of scientific explanations for visitations by aliens and demons? Since the experience of hypnagogic or hypnopompic phenomena is quite common, and since people often attribute supernatural causes to these experiences (Fukuda et al. 1987; Liddon 1967; McKellar 1954), from a statistical standpoint, it is not "abnormal" to engage in such spiritualistic speculation. Moreover, there is also evidence that people who believe that they have been abducted by aliens are, in general, not mentally ill (Klass 1989; Blackmore 1998). While there is evidence of some emotional difficulties among people who claim UFO abduction (Klass 1989), others insist that supposedly "genuine UFO abductees" may suffer symptoms of post-traumatic stress disorder (Hopkins et al. 1992). The likelihood, however, that these people were *truly* abducted has been called into question, and in most cases, hypnagogic and hypnopompic hallucinations provide a better explanation (Klass 1993; Stires 1993; Reisner 1993; Blackmore 1998).

In general, it appears that most people who misinterpret hypnagogic hallucinations do not experience severe psychiatric

consequences. But due to his unusual circumstances and a pre-existing severe depression, John entered into a life-and-death struggle, partially fueled by his interpretation that the hypnopompic "demon" was real. He returned from the brink of destruction, hopefully wiser for the experience. Had his interpretations of his hypnopompic experiences led him to descend further into the abyss of unreason, the cost to himself and his family could have been immeasurable. The potential price of misunderstanding these phenomena clearly shows the need for a wider and better understanding of sleep paralysis, and the accompanying hypnagogic and hypnopompic hallucinations.

Acknowledgment

I thank Robert A. Baker for his review of the manuscript, and for the many improvements that resulted from his efforts.

Note

The name of this patient was changed, and this article was published with his informed consent. I thank John for allowing others to benefit from his experience.

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Specious Arguments: Twisting Scientific Theory and the Bible

MATT YOUNG

The Genesis Question: Scientific Advances and the Accuracy of Genesis.

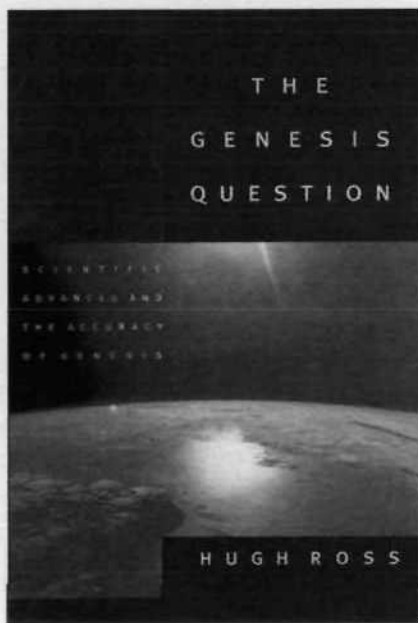
By Hugh Ross. Navpress, Colorado Springs, Colorado, 1998. ISBN 1-57683-111-6. 235 pp. Hardcover, \$20.

Hugh Ross is a new kind of fundamentalist: a scientist who does not deny evolution, geology, and the Big Bang theory but rather accepts these theories, with his own variations, and instead twists both the Bible and scientific theory to make them agree. (Although he has a doctorate in astronomy from the University of Toronto, Ross today directs an institute "to research and proclaim the factual basis for faith in God and His Word and the Bible," according to this book.)

Like his Jewish counterpart Gerald Schroeder (Young 1998), Ross indulges in misleading probability arguments. For example, he claims without evidence that life must have arisen at least fifty times between 3.86 and 3.5 billion years ago. Therefore, it must be easy to create life. Why then can we not manufacture even a single strand of DNA? Ross thinks that Earth is so finely tuned that life could not have arisen here accidentally. His argument ignores that there might be billions of other planets that are not quite so finely tuned and on which life did not arise. The odds that life will arise on any one planet are indeed small, but the odds that life will arise *somewhere* may not be so small, given the vast number of somewheres.

Ross accepts uncritically the Bible's

claim that lifetimes were typically 900 years around the time of Adam. He says our lifetimes are now a mere 120 years because of cosmic rays from the Vela supernova. Ross's arguments would be



more convincing if cosmic rays were the major source of radiation to the gonads. At sea level, however, cosmic rays account for only 25 to 40 percent of the radiation exposure to the gonads (Morgan and Turner 1973).

Ross cites the discovery of circumstellar disks around ten or more stars as evidence

that the primordial Earth had an opaque atmosphere. He falsely makes it appear that we have directly observed the extra-solar planets and studied their atmospheres. He considers Earth's transparent and rarified atmosphere a mystery because, he claims, the farther from the Sun and the heavier the planet, the thicker the atmosphere. Since Venus's atmosphere is very thick, Earth's should be thicker. The mystery is solved by the Moon miracle: The Moon crashed into the Earth about 4.25 billion years ago, cleared the atmosphere of dust and debris, and let the light from the sun through. It is at that time that God said, "Let there be light."

The rule, the farther from the Sun, the thicker the atmosphere, however, is not true in the solar system. The density of Venus's atmosphere is well understood, and we need not invoke a Moon miracle to explain a non-existent mystery.

Ross relies occasionally on "exact"

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translations of Hebrew, yet his understanding of Hebrew seems limited to isolated words. For example, he translates *sheretz nephesh chayyah*, a swarm of living (or wild) creatures, as if it were punctuated *sheretz, nephesh chayyah*, swarming things and living creatures. He seems unaware that two consecutive nouns act as a prepositional phrase in English. The point is important because, later, he uses *nephesh* to mean “soulful creature,” or higher animal that can show emotion, whereas the text makes clear that the waters also swarm with creatures with *nephesh*. Thus, *nephesh* does not mean soulful creature but rather any creature with the spark of life.

Similarly, Ross argues, incorrectly, that *chayyah* necessarily means long-legged land mammal and therefore that *remes* necessarily refers to short-legged land mammals such as rodents, hares, and armadillos. These mistranslations are required by Ross’s insistence that God is leading up to the creation of humans and are typical of literalists’ thinking: force the translation to agree with your preconceived notion, no matter what.

The myth that God created Eve from Adam’s rib is too much even for Ross. Ross claims that it is based on a mistranslation. In fact, says Ross, God took a biopsy from Adam and used genetic engineering to create Eve. (An odd way to go about it, since Eve has more genes than Adam; God should have made Eve first and then pruned.) Ross is plainly wrong. The text states in so many words that God removed one of Adam’s ribs and filled the void with flesh. You don’t need to fill a small biopsy with flesh.

Speaking of DNA, Ross uses “mitochondrial Eve” to verify the date of Biblical Eve. Mitochondrial Eve is a hypothetical female who is the putative ancestor of all living women. Her existence is inferred from studies of mitochondrial DNA, which is passed through the mother only.

Less well known than mitochondrial Eve is what I will call “chromosomal Adam,” the putative ancestor of all living men. Chromosomal Adam has been

inferred from studies of the Y chromosome and is analogous to mitochondrial Eve. Ross claims that mitochondrial Eve predates chromosomal Adam because the most recent common ancestor of living men was Noah, whereas the female lineage goes through the wives of Noah and his sons to Eve.

The existence of mitochondrial Eve is still controversial but even so does not imply a time when there was only a single woman. At most, we can say that there was once an evolutionary bottleneck, when there were only a relatively few women, and since then all lineages but mitochondrial Eve’s have died out. Mitochondrial Eve may or may not be the ancestor of all living women, but she was certainly not the ancestor of all women who ever lived. Nor was chromosomal Adam the ancestor of all men who ever lived.

Ross knows—or ought to know—all this, but his gullible readers do not, and he exploits them with many such specious arguments.

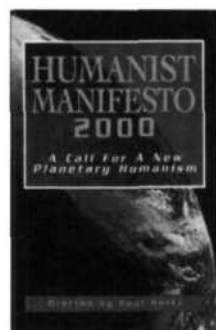
What is truly appalling about this book, however, is the cavalier way in which Ross justifies mass murder and genocide by the ancient Israelites. Instead of a primitive people callously using God as justification for slaughter-

ing their enemies and furthering their conquest, Ross sees God using a holy people to make surgical strikes against “reprobation.” When reprobation is bad enough, it infects everything around it, even the soulful animals. Everything has to be destroyed, much as a surgeon removes cancerous tissue. The cancerous tissue, however, consists of humans beings, most of whom are guilty, if at all, by association. I could not help wondering what would happen if Ross and his co-religionists decide that Jews or skeptics or liberal Protestants or critical book reviewers are reprobate and need to be excised.

This is a shortened version of a review published in the *Rocky Mountain Skeptic*, July 2000. Many thanks to Mike Grant of the University of Colorado for checking my biology, Shirley and Gideon Weisz for checking my Hebrew, and Lowell Yemin for supplying the reference by Morgan and Turner.

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What Humanism Stands For

MARK DURM

Humanist Manifesto 2000: A Call for a New Planetary Humanism. By Paul Kurtz. Prometheus Books, Amherst, New York, 2000. ISBN 1-57392-783-X. 76 pp. Softcover, \$7.95.

Paul Kurtz introduces the *Humanist Manifesto 2000* with these comments:

The following recommendations are offered in modesty but with the conviction that they can contribute to a dialogue among the different cultural,

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political, economic, and religious viewpoints in the world. Although we who endorse this document share common principles and values, we are prepared to modify our views in the light of new knowledge, altered circumstances, and unforeseen problems that may arise. It is not possible to create a permanent Manifesto, but it is useful and wise to devise a working document, open to revision.

The document should be read by more people, studied by more politicians, considered by more ministers, and discussed by more teachers. This *Humanist Manifesto 2000* is the fifth such document. It was preceded by *Humanist Manifesto I* (1933), *Humanist Manifesto II* (1973), *A Secular Humanist Declaration* (1980), and *A Declaration of Interdependence* (1988).

How can anyone argue with a philosophy that emphasizes “the values of freedom and happiness and the virtues of universal human rights” and “believe[s] that it is possible to create a better world”? Kurtz adds further “...we need squarely to confront the severe economic, social, and political problems the world still faces. The prophets of doom are pessimistic; the Jeremiahs predict misfortune and calamity. We respond that, if our problems are to be solved, it will be only by marshaling reason, science, and human endeavor.”

In sections entitled “Prospects for a Better Future,” “Ethics and Reason,” “A Universal Commitment to Humanity as a Whole,” “The Need for New Planetary Institutions,” “Optimism about the Human Prospect,” among others, Kurtz weaves a strong argument for this particular kind of philosophy.

In the “Ethics and Reason” section, Kurtz writes that the highest ethical values are essential and should be realized in the humanist outlook. He argues that the humanist movement has been unfairly blamed for the alleged moral breakdown of society. He writes further that humanist ethics “does not require agreement about theological or religious premises ... but it relates ethical choices ultimately to shared human interests, wants, needs, and values.” Kurtz explains further that humanists are not against religion, but instead defend the separation of religion and state. Humanists are, however, against theocracies that seek to impose one moral or religious code on everyone. This same belief was espoused much earlier in the writings of the founding fathers of the United States.

Some of the key principles in the ethics

of humanism are: (1) that the dignity and autonomy of the individual are central values and that humanist ethics are committed to maximizing freedom of choice; (2) that the humanist belief in self-determination does *not* mean that humanists condone just any kind of human conduct; and (3) that humanists recognize responsibilities and duties to others.

In what may be the *Manifesto's* most controversial section, “The Need for New Planetary Institutions,” Kurtz argues for a stronger world body, modeled on the United Nations, but stronger than the United Nations. He uses the term “World Parliament” and says that elections should be based on population, not governments. He further believes that the veto in the U.N.’s Security Council by the Big Five needs to be repealed. Moreover, he urges the development of an effective World Court and an International Judiciary

with sufficient power to enforce its rulings. One could argue that the most controversial element in the *Manifesto* is the recommendation for “an international system of taxation in order to assist the underdeveloped sectors of the human family and to fulfill social needs not fulfilled by market forces.”

The final pages of the book list those who endorse this *Humanist Manifesto 2000*. These 141 endorsers are of many different distinguished professions and from many different countries. The book ends with the following paragraph:

Those who endorse *Humanist Manifesto 2000* do not necessarily agree with every provision in it. We do, however, accept its main principles and offer it in order to contribute to constructive dialogue. We invite other men and women representing different traditions to join with us in working for a better world in the planetary society that is now emerging.



A Gentle Guide Through the Evolution/Creationism Issue

JAMES C. SULLIVAN

The Triumph of Evolution and the Failure of Creationism.
By Niles Eldredge. W.H. Freeman and Company, 2000.
223 pp. \$24.95.

This book is, obviously, intended to go soft on creationists. The subtitle about “the failure of Creationism” is printed backwards on the cover. Few will notice. The contents are fairly gentle, too.

Eldredge goes over each creationist argument proposed against evolution theory. One by one, he refutes each disagreement, as if he were calmly shooting clay pigeons out of the sky. The author, however, treats the opposition with kindness and dignity.

Creation science, Bible fundamental-

James Sullivan writes from South Bend, Indiana.

ists’ relatively recent attempt to put Bible stories on an equal footing with science so both can be taught as rival explanations in the classroom, has, to Eldredge, some preposterous assertions. One of those is that the Genesis story is literally true. Thus, scientific creationists maintain that Earth is only a little over 4,000 years old. This runs counter to evolutionists who believe, with substantial proof, that Earth is actually well over 3 billion years old.

This tome is for laypeople who wish to fight scientific creationism and keep it out of public school curriculums.

Interestingly, only a handful of fundamental Christian sects still deny evolutionary theory while numerous denominations have come to accept all or most of it.

Evolutionists find it frustrating to debate the issue with scientific creationists. Every time evolutionists make a point, the other side says the fact is faked, misinterpreted, or just plain false. Yet scientific creationists' proofs, if indeed they have any, are scant and, at best, hardly substantial.

Some so-called learned men and women, scientists, teachers, and lawyers among them, have embraced scientific creationism. And these people are honest and decent folks, according to this book's author. Sadly, their religious faith guides their position against evolution.

"Phillip Johnson," says Eldredge, "is, hands down, the most visible and successful creationist of the 1990s. . . . [He] makes no bones about either his born-again Christian beliefs or his conservative political views. . . . In most of his earlier public presentations, Johnson spent most of his time attacking the fossil record—the old question of gaps and intermediacy. Johnson, in the rebuttal period [of his current debate with evolutionists], finally gets down to some of the details of what really is somewhat novel about his approach: his insistence that sci-

ence in general—and evolutionary biology perhaps in particular—reflects an underlying philosophical stance he calls . . . atheistic."

Yet, as Eldredge points out, evolution theory is well accepted today by most of Johnson's co-religionists.

Eldredge, a paleontologist, is a curator in the Department of Invertebrate Paleontology at the American Museum of Natural History. He has written numerous books on science, including some with Stephen Jay Gould. Even the end notes in this book are interesting. It's highly recommended. □

NEW BOOKS

Listing does not preclude future review.

Applied Common Sense. Bill Davies. WERD Technology, Inc., Unit 35B, Ste. 155, 10520 Yonge Street, Richmond Hill, Ontario L4C 3C7, Canada. 2000. ISBN 0-9681830-2-6. 214 pp. Softcover (no price given). An attempt to show how one can apply common sense—a practical thought process that uses critical thinking and pragmatic intelligent decision making—to solve problems or make rational decisions. The author supplies a series of short entries discussing issues in the area of intelligence and I.Q., gender differences, and politics. He sometimes provides several viewpoints and identifies "evidence-based data" and "conservative" and "liberal" opinions.

Bizarre Cases. The Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), P.O. Box 703, Amherst, NY 14226-0703. 2000. 168 pp. Softcover. \$10. A collection of twenty-one articles from the *SKEPTICAL INQUIRER*. The emphasis in this slender book is on mostly short pieces that involve classic case-study investigations of the paranormal. It is divided into sections on alternative medicine, aliens, entities, urban legends, and "mind games" (e.g., "Hidden Messages and the Bible Code" and "Superstition and the Regression Effect"). The aim is to plant a seed of skepticism and provide readers with good-quality skeptical investigations and information on bizarre claims not normally presented in most popular accounts.

Quantum Reflections. Edited by John Ellis and Daniele Amati. Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211. 2000. ISBN 0-521-63008-8. 202 pp. Hardcover, \$49.95. An introduction

to some of the basic philosophical and conceptual questions underlying the formulation of quantum mechanics, one of the most baffling and far-reaching aspects of modern physics. The book consists of essays by leading thinkers in this field, who have been inspired by the profound work of the late John Bell. Contributors include Roger Penrose, Helmut Rauch, Alain Aspect, Gian Carlo Ghirardi, Jon Magne Leinaas, Abner Shimony, Kurt Gottfried, N. David Mermin, and Roman Jackiw.

Science Meets Alternative Medicine: What the Evidence Says About Unconventional Treatments. Edited by Wallace Sampson, M.D., and Lewis Vaughn. Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2000. ISBN 1-57392-803-8. 246 pp. Softcover, \$19. An authoritative collection of research articles and papers dedicated to the careful scrutiny of claims of alternative medicine presented at the conference "Science Meets Alternative Medicine" in Philadelphia, sponsored by CSICOP and the *Scientific Review of Alternative Medicine*. It was the first major North American program to explore the social movement of alternative medicine. Scientists, physicians, and scholars such as Sampson, Paul Kurtz ("In Defense of Scientific Medicine"), Saul Green, James Alcock, Barry L. Beyerstein, Ray Hyman, Arnold Relman, Rebecca Long, and Steven Novella use scientific and rational criteria to review evidence for therapeutic claims, critique published studies, and discuss the methods and principles of valid research.

Timeless Reality: Symmetry, Simplicity, and Multiple Universes. Victor J. Stenger, Ph.D. Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2000. ISBN 1-57392-859-3. 396 pp. Hardcover, \$33. A

physics professor, rationalist, and writer shows how time symmetry at the quantum level makes it possible to draw a model of underlying reality that is simpler and more symmetric than the conventional view. This reality is timeless, with no beginning, no end, and no arrow of time. One consequence is that there may be multiple universes. Throughout, Stenger emphasizes that the quantum world only appears mysterious when forced to obey rules of everyday human experience and that no one need think that any phenomena currently lacking full scientific explanations can only be revealed by nonscientific or supernatural means.

Unexplained Phenomena: Mysteries and Curiosities of Science, Folklore and Superstition. Bob Rickard and John Michell. Rough Guides, 345 Hudson Street, New York, NY 10014. 2000. ISBN 1-85828-589-5. 390 pp. Softcover, \$19.95. A well-illustrated guide to the rich variety of anomalous and often bizarre phenomena that people have experienced throughout the centuries. Organized into teleportation, strange rains, wild talents, the madness of crowds, the good folk, invisibles and other assailants, the haunted planet, signs and portents, images, monsters, and living wonders. The book combines selected chapters from the authors' two earlier books on unexplained phenomena, *Phenomena* and *Living Wonders*. Don't look for heavy skepticism here. The authors say they approach things with humility and wonder and they seek to replace suspicion with delight, pessimism with curiosity, and belief with a desire to understand. They suggest the location of truth is "not out there but in the human imagination itself."

—Kendrick Frazier

Blackmore, Susan. "Into the Unknown." *New Scientist*, November 4, 2000, p. 55. "First Person" opinion piece in which Blackmore announces she's given up on any chance of the reality of psychic phenomena. (Published in this issue, page 25.)

CA Forum on Theory in Anthropology: Sex and Hoax in Samoa. *Current Anthropology*, 41(4):609-622, August-October 2000. A three-article forum on the Mead-Freeman controversy (see related item on page 57). The contents: Derek Freeman, "Was Margaret Mead Misled or Did She Misperceive Samoa?"; Martin Orans, "Hoaxing, Polemics, and Science"; and James E. Côté, "Was *Coming of Age in Samoa* Based on a 'Fateful Hoaxing'? A Close Look at Freeman's Claim Based on the Mead-Boas Correspondence." Freeman then replies.

Dodson, Chad S., Wilma Koutstaal, and Daniel L. Schacter. "Escape from Illusion: Reducing False Memories." *Trends in Cognitive Sciences*, 4(10):391-397, October 2000. The authors ask, "How can memory misattributions be reduced or avoided?"

Upon considering evidence that documented false memory occurs, they list three ways to minimize such memories: encoding influences, retrieval influences, and combined encoding and retrieval influences. Because an individual's failure to recollect detailed information about an item is one of the main contributors to false memories, "memory for specific item information plays a central role in each of the techniques for reducing false memories."

Garland, Susan B. "A Healing Touch." *The Washington Post*, October 24, 2000, Health section, pp. 12-14, 17-18. A Washington public housing neighborhood is the scene for a HUD-funded "goddess-typing" form of alternative healing. This therapy, which includes personality typing according to three dominant glands (thyroid, adrenal, pancreas) and the use of incense, candles, and gemstones, is in place to help these residents "improve their lives by managing stress, preventing chronic illness, and stopping self-destructive conduct." Skeptics of this type of therapy argue that there is "nothing in the scientific liter-

ature to support endocrine-based personality typing." In fact, even a teacher of alternative medicine calls this form of therapy "woo-woo crap." So why are the public housing residents healthier? Skeptics say it's due to the extra attention the residents are getting, and their belief that this therapy will work.

Morris, Robert L. "Parapsychology in the 21st Century." *The Journal of Parapsychology*, 64 (2):123-137, June 2000. Morris revisits his decade-old ten identified areas of potential difficulties that faced parapsychology at the end of the twentieth century and offers six new strategies for updating this field into more modern times. Included in the list of strategies: evaluating more completely what has already been learned, focusing on valid and reliable measures, breaking down the divisions between "skeptic" and "researcher," and integrating more effectively with the knowledge of experts in other areas.

ARTICLES OF NOTE
Continued on page 57

SCIENCE BEST SELLERS

Top Ten Best Sellers in New York

- Galileo's Daughter: A Historical Memoir of Science, Faith, and Love** (Paper)
Dava Sobel
Penguin USA
- Genome: The Autobiography of a Species in 23 Chapters**
Matt Ridley
HarperCollins
- E = mc²: A Biography of the World's Most Famous Equation**
David Bodanis
Walker & Co.
- Galileo's Daughter: A Historical Memoir of Science, Faith, and Love** (Hardcover)
Dava Sobel
Penguin USA
- The New Yorker Book of Technology Cartoons**
Robert Mankoff
Bloomberg Press
- Nightwatch: A Practical Guide to Viewing the Universe**
Terence Dickinson
Firefly Books
- The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory**
Brian Greene
Vintage Books
- The Code Book: The Science of Secrecy from Ancient Egypt to Quantum Cryptography**
Simon Singh
Anchor Books
- Trilobite: Eyewitness to Evolution**
Richard Fortey
Knopf
- To Engineer Is Human: The Role of Failure in Successful Design**
Henry Petroski
Vintage Books

By arrangement with Amazon.com, January 2001.

How to Live with Evolution

SUSAN BURY

As we ring in 2001, it's time we finally wring out the public debate over whether evolution occurred and gave rise to the living world. Evolution is real, and we are among its products. Let's get over it, get with it, and get on with it.

Evolution was prominent not only in the Kansas school board elections but also in a closely watched election for one of the state's congressional seats. A quick tour of any news service finds plenty more head-shaking examples of controversy. A judge campaigning in Alabama says creationism deserves at least equal billing with evolution in school instruction. A Minnesota high school teacher sues his school district for the right to teach evolution as a fallible theory rather than as accepted truth. Parents in Fort Collins, Colorado, protest when a private school chartered to teach an expanded science curriculum refuses to teach evolution.

Seventy-five years after the Scopes trial, this kind of public argument over evolution takes precious time and attention away from critical current issues. It's time we all learned how to live with evolution.

Step 1: Get Over It.

Evolution fits the evidence, and the evi-

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dence for evolution is overwhelming. Here is an overview from *Science and Creationism* (National Academy of Sciences 1999):

The evolution of all the organisms that live on Earth today from ancestors that lived in the past is at the core of genetics, biochemistry, neurobiology, physiology, ecology, and other biological disciplines. It helps to explain the emergence of new infectious diseases, the development of antibiotic resistance in bacteria, the agricultural relationships among wild and domestic plants and animals, the composition of Earth's atmosphere, the molecular machinery of the cell, the similarities between human beings and other primates, and countless other features of the biological and physical world.

Bones of dinosaurs, mastodons, and assorted hominids were not planted by God just to give us something to do in our spare time. (If so, God wouldn't have bothered with baseball.) These critters existed in time and space. There will always be debate over whether this fossil pre-dates that one, whether one geological stratum was thrust up through a later one. Yet the totality of evidence fits evolution.

If DNA evidence persuaded you that O.J. Simpson killed Ron Goldman and Nicole Simpson, then you must accept that chimpanzees and people are 98 percent the same genetically, that they and we descended from a common ancestor. The Neanderthals were our cousins, and they did the best they could. We're

doing the best we can; our present status is not the ultimate goal of evolution. None of this changes the truth that our species is unique in the planet's history.

I've often heard religious people say that each of us is special in the eyes of God. Evolution means that you are a unique product of eons of time, a singular result of uncounted strands of circumstance over generations of human life. That is as special, glorious, and profound as any religious belief.

Step 2: Get With It.

If we're taught anything in school, it should be evolution and its meaning in our lives. Every person should understand how our genetic heritage unfolds, from the egg uniting with the sperm through our time in the womb and our lifetime in the world. This knowledge can help us understand our behavior, trends in our society, and the dynamics of world population.

It won't be easy. We must give up the notion that life can be explained by simple generalizations. To evaluate sweeping claims about genes and intelligence, for example, you must understand the complexity of how genes express themselves in the environment. "There is no question that children inherit different profiles of brain physiology which affect mental functioning," says Harvard psychologist Jerome Kagan in *Three Seductive Ideas*. Yet he cites a study showing that children exposed to

cocaine in the womb showed poor recognition memory but were not impaired on other cognitive skills. "The decision to average the performances on a varied set of tests that require different talents in order to come up with one value called intelligence," Kagan writes, "is not logical."

If you serve on a jury before which DNA evidence is presented, you need at least a clue about what DNA means. If you're concerned about health care and the role of health insurance, you'd better understand the connection between DNA testing and the actual risk of disease.

Most crucially, anyone still arguing over whether humans evolved is falling behind the much more important debates about whether to regulate cloning research, allow people to breed designer children, and a host of other questions. While fundamentalists waste time arguing that we were hand-made by God, scientists and entrepreneurs are playing God by isolating and marketing the very substances of life. As a society, we'd better get up to speed.

Step 3: Get On With It.

If you think God wants you to act morally and do right by your children, just think how important it is for the products of evolution to fly straight. There's no plan to evolution; the future depends on how we behave. With every breath, bite of food, and elimination of waste, we are part of a biological exchange with the rest of life. With every act of decency, every cruelty or falsehood, we affect the well-being of our community. We are responsible for determining our effect on everything around us: whether we're causing joy or pain, health or sickness. Evolution places as heavy a moral accountability on us as any religious teaching.

Much has been made of the evolutionary roots of differences between men and women. Yet, men are not from Mars, and women are not from Venus. The sexes evolved together here on Earth. Instead of snickering and sniping at one another, let's respect our differences along with our basic biological unity. Let's stop looking for easy answers

about "intelligence," accept the staggering complexity of individual human development, and try to bring out the best in each of us.

A writer friend who's published more than a dozen nature books says that evolution doesn't preclude a benevolent God who set the process in motion. We'll always ponder whether we will in fact encounter God. While that remains unknowable, let's get on with what we know. Let's act responsibly in light of the truth of evolution.

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ARTICLES OF NOTE from page 55

Rhodes, Richard. "The Media-Violence Myth." *Rolling Stone*, November 23, 2000, pp. 55-58. "Across 500 years, homicide rates progressively declined to their modern lows, and continued to do so despite the increasing number of media technologies," writes Rhodes. So do the claims that media-violence creates violent children have merit? Rhodes sums them up in two words, "They're baloney." In fact, results from scientific studies are proving the exact opposite. As sociologist Steven Messner says, "When people are home watching TV, they're not out committing crimes."

Special Issue: The Mead-Freeman Controversy in Review. *Journal of Youth and Adolescence*. 29(5):525-616, October 2000. A multidisciplinary research journal devotes an entire issue to the controversy about the validity of Margaret Mead's

anthropological research into adolescent sexuality in Samoa as pressed vociferously by Australian anthropologist Derek Freeman. (See SI, November/December 1998, May/June 1999, November/December 2000.) The contents: James Côté, "The Mead-Freeman Controversy in Review"; Paul Shankman, "Culture, Biology, and Evolution: The Mead-Freeman Controversy Revisited"; Stephen O. Murray and Regna Darnell, "Margaret Mead and Paradigm Shifts Within Anthropology During the 1920s"; James E. Côté, "The Implausibility of Freeman's Hoaxing Theory: An Update"; and Hiram Caton, "The Mead/Freeman Controversy Is Over: A Retrospect." An appendix gives excerpts from the Mead-Boas correspondence. Some observers have wearied of this controversy, others consider it one of the most important in the social sciences ever (the 1998 book *Great Feuds in Science*, by Hal Hellman, includes it as "one of the ten liveliest disputes ever"). Writes issue editor James E. Côté: "The authors of this issue have set out to

characterize and review key aspects of this controversy in an attempt to put an end to those things for which a reasonable consensus can be reached, and to put in context those issues that are likely to remain matters of opinion easily influenced by ideological preconceptions."

Spinney, Laura. "Blind to Change." *New Scientist*, November 18, 2000, pp. 28-32. In an article about "change blindness . . . a phenomenon that suggests we see far less than we think," Spinney calls upon several studies in this area and discusses the "unnerving consequences" of taking in only tiny pieces of information at a time. "Our impression of seeing everything is just that, an impression. In fact, we extract a few details and rely on memory, or perhaps even our imagination, for the rest," says Spinney. She writes that because our picture of the world is less than complete at any given time, "there is the potential for distortion and error."

—Jodi Chapman and
Kendrick Frazier

Research on the Feeling of Being Stared At

RUPERT SHELDRAKE

Two recent articles in the *SKEPTICAL INQUIRER* have claimed that the feeling of being stared at is an illusion. Both have attempted to refute my own experimental research on the subject, which indicates that many people do indeed have an unexplained ability to detect stares.

A variety of surveys have shown that most people believe they can feel unseen stares (Sheldrake 1994). In his article "Can we tell when someone is staring at us?" (March/April 2000 *SI*) Robert A. Baker, a CSICOP Fellow, dismissed this belief as false. "Skeptics . . . believe that it is nothing more than a superstition and/or a response to subtle signals from the environment" (Baker 2000, p. 40). He claimed to provide empirical evidence to support his presuppositions.

David Marks (also a CSICOP Fellow) and John Colwell in their article "The psychic staring effect: An artifact of pseudo randomization" (September/October 2000 *SI*) claimed that my own results were an artifact arising from one of the randomization procedures I have followed: "When random sequences are used people can detect staring at no better than chance rates," they asserted. In this article I show that this claim is not true. Both papers are seriously flawed, and neither stands up to skeptical scrutiny.

Baker's "Demonstrations"

For his first demonstration Baker selected people who were engrossed in eating or drinking, watching TV, working at computer terminals or reading in the University of Kentucky library. He unobtrusively positioned himself behind them and stared at them. He then intro-

duced himself and asked them to fill in a response sheet.

Baker's prediction was that people engrossed in an activity would "never" attend to a sensation of being stared at. Thirty-five out of forty people checked the expected response: "During the last 5 minutes I was totally unaware that anyone was looking at me." But two people reported that they had been aware that they were "being observed and stared at" and three reported they felt something was "wrong." Baker noted that while he was staring at these very subjects, "All three stood up, looked around, shifted their position several times and appeared to be momentarily distracted on a number of occasions."

The answers of these five people went against Baker's prediction, so he retrospectively introduced another criterion. He ruled that subjects should be able to say *where he had been sitting when he was looking at them*. None could. He regarded their inability to do so as a "good reason to believe that they were . . . not aware that they were being viewed" (Baker 2000, p. 40). But this begs the question. A sensitivity to being stared at does not necessarily imply an awareness of the position of the starrer.

To complete his analysis, Baker "discarded" the results from the two people who said they knew they had been stared at. He regarded them as "suspect" because one claimed she was constantly being spied on, and the other claimed he had extrasensory ability. But if the sense of being stared at really exists, people with paranoid tendencies might be more sensitive than most (Sheldrake 1994), and so might people who claim to have extrasensory abilities.

In Baker's second demonstration sub-

jects were looked at from behind by Baker himself, together with a student, at random intervals, and asked to say when they thought they were being looked at. They were told that they would be stared at for five one-minute periods during a twenty-minute trial. In accordance with his expectations, he found that their guesses were no better than chance.

Why were these results so different from the consistently positive and statistically significant effects obtained by myself and others, even when subjects were blindfolded and separated from starrers by closed windows (Sheldrake 2000)? There are several relevant differences in procedure.

In my own experimental design, in a series of 20 trials there were more or less equal numbers of control and looking trials, whereas in Baker's there were 15 control and only 5 looking one-minute periods. This peculiar feature precluded a straightforward statistical analysis of the results. Each subject was allowed only five guesses as to when they were being looked at. If guesses were entirely random, misses would be three times more probable than hits.

In my experiments each trial lasted only about 10 seconds, but Baker used 60-second trial periods. In preliminary tests, I found that subjects gave the highest percentage of correct guesses when they were asked to guess quickly, without spending much time thinking about their response.

Baker also introduced three different sources of distraction for his subjects:

1. Beside each time on the specimen score sheet shown in Baker's paper there was a pair of unexplained numbers, for

example: 0801 1&2; 0802 2&3 (Baker, 2000, p. 38). I wrote to Baker to ask for a clarification, but his reply confused matters further. He said that the times shown on his specimen time-sheet "were not on the subject's time-sheet at all—since they, of course, would differ from subject to subject. The 1&2 indicates the first minute, the numbers 2&3 indicates the second minute of the time-period, etc."

If I had been one of Baker's subjects, I would have been at a loss to understand his instructions. If I thought I was being stared at, to start with I would have had to calculate from the clock in which minute this happened. Then I would have had to decide where to write my response. Say I felt I was being stared at in the seventh minute. Would I write my response on the line labeled 6&7 or on the line labeled 7&8?

2. The instructions published by Baker are self-contradictory. He says that the subjects were told that there would be five one-minute staring periods. Yet the specimen instruction-sheet states that subjects would be stared at "five times for two minutes each." Baker now concedes that this was an error (Baker, personal communication, May 27, 2000). To confuse matters further, in his article the one-minute staring periods are also described as "five-minute periods" (Baker 2000, p. 38).

3. Not only did Baker instruct his subjects to guess when they were being stared at, but they were also asked to compare their guess with their responses in other periods so that they could change their previous guesses, if they wanted to. This instruction might well have helped to distract subjects still further from their immediate feelings.

Like Baker, I predict that those who follow his experimental methods (including his ambiguous instructions) are likely to replicate his negative results. But I also predict that my own positive results should be replicable by those who use similar methods to my own (Sheldrake 1998, 1999, 2000).

Marks and Colwell's Claims

In January 2000 the *British Journal of Psychology* published a paper entitled "The ability to detect unseen staring: A literature review and empirical tests" by John Colwell, Sadi Schröder and David Sladen. In their principal experiment, they used methods based on my own procedures, and followed my own randomized sequences of trials. They obtained strikingly significant ($p < 0.001$) positive results that closely resembled my own findings (Sheldrake 1998, 1999). However, they argued that their participants' positive scores did not support the idea that people really can feel stares; instead, they were an artifact that arose from "the detection and response to structure" present in my randomized sequences. This is the paper on which Marks and Colwell based their SI article.

The Background to this Controversy

In my book *Seven Experiments That Could Change the World* (1994) I described how the feeling of being stared at could be investigated empirically both simply and inexpensively. As well as carrying out many experiments of my own, I published detailed instructions on my Web site (www.sheldrake.org) and more than 20,000 trials have now been carried out, many of them in schools and colleges. These experiments have given positive, repeatable, and highly significant results, implying that there is indeed a widespread sensitivity to being stared at from behind (Sheldrake 1998, 1999, 2000).

The results showed a characteristic and highly repeatable pattern, with highly significant positive scores in the looking trials and scores close to the chance level of 50% in the not-looking trials (figure 1a).

This pattern is consistent with an ability to detect unseen staring (Sheldrake 1998, 1999). If the sense of being stared at is real, it would be expected to work when people are indeed being stared at. In the not-looking trials the subjects were being asked to detect the *absence* of a feeling of

being looked at, a situation with no parallel in real-life experience; and under these conditions their guesses were no better than chance. Hence an asymmetry between the two kinds of trials would be expected if there really were an ability to detect unseen staring. By contrast, if subjects were cheating or responding to subtle sensory clues, scores should be elevated symmetrically in both looking and the not-looking trials.

Experiment One

In their first experiment Colwell et al. (2000) followed my own procedures in most respects, but instead of testing a large number of subjects in just one or two sessions, as in my own experiments, they tested twelve subjects in twelve successive sessions. And instead of the participants working in pairs, taking turns as starers and subjects, one of the authors, Sadi Schröder, was the sole starer in all sessions. In the first three sessions the subjects received no feedback; in the following nine they received immediate feedback as to whether their guesses were correct or not.

In the sessions with feedback, in the looking trials 59.6 percent of the guesses were correct. By contrast, in the not-looking trials the results were exactly at chance levels, with 50 percent correct (figure 1B). The overall accuracy of the subjects' guesses was significant at the $p < 0.001$ level. These findings were in remarkable agreement with my own and those of other investigators. But Marks and Colwell (2000) tried to dismiss them as an artifact.

The first point in Marks and Colwell's argument was that the positive results were obtained when subjects were given feedback. I too have found that subjects perform better with feedback (Sheldrake 1994, 1999). We also agree that feedback can enable the participants to improve their performance with practice. Colwell et al. (2000) provided clear evidence for a learning effect, with a significant ($p < 0.003$) linear trend of improvement in accuracy over nine sessions.

Marks and Colwell then postulated

that the subjects' success when they were given feedback was due to an implicit learning of structures hidden in my randomized sequences. They showed by means of several tests that my sequences deviated from "structureless" randomness. Ironically, this was because I adopted a recommendation by Wiseman and Smith (1994) to use counterbalanced sequences containing equal numbers of looking and not-looking trials. Like Marks and Colwell, Wiseman and Smith (1994) obtained an unexpectedly positive result in a staring experiment and then tried to explain it as an artifact of the randomization procedure, but in their case they attributed it to a lack of counterbalancing.

The crux of Marks and Colwell's argument was that because of the deviations from "structureless" randomness in my sequences, participants given feedback could have learned implicitly to detect patterns, for example that there was a relatively high probability of an alternation after "two of a kind." But they offered no evidence that their participants in fact learned to follow such rules. They also failed to mention a fundamental flaw in their hypothesis, perhaps hoping that readers would not spot it. Implicit learning should in principle enable participants to improve equally in looking and not-looking trials. But this is not what happened; significant improvements occurred *only* in the looking trials (figure 1b).

Unlike Marks and Colwell (2000), Colwell et al. (2000) explicitly acknowledged this problem, but could only suggest that participants may have "focused more on the detection of staring than non-staring episodes." This begs the question. The subjects *must* have selectively detected when staring trials were happening, otherwise their scores would

not have been above chance levels and shown such an improvement in successive sessions. This might have occurred because they could indeed detect when they were being stared at.

Experiment Two

Colwell et al.'s second experiment was designed to test their pattern-detection hypothesis by using "structureless" ran-

take it for granted that changing the starrer made no difference?

Such experimenter effects are not symmetrical. The detection of Schlitz's stares by the participants under conditions that excluded sensory cues implies the existence of an unexplained sensitivity to stares. By contrast, the failure to detect Wiseman's stares implies only that Wiseman was an ineffective starrer.

Perhaps his negative expectations consciously or unconsciously influenced the way he looked at the subjects.

In Colwell et al.'s Experiment Two, the starrer, Sladen, as one of the proponents of the pattern-detection hypothesis, was presumably expecting a nonsignificant result. His negative expectations could well have influenced the way in which he stared at the participants. It would be interesting to know if Sadi Schröder, the graduate student who acted as starrer in Experiment One, was more open to the possibility that people really can detect when they are being stared at.

Other Relevant Experiments

Marks and Colwell claimed that their pattern-detection hypothesis invalidated the positive results of staring experiments carried out by myself and others. If these experiments had involved

pseudo-random sequences and feedback, as required by their hypothesis, their criticism might have been relevant. But this is not how the tests were done, as they would have seen for themselves if they had read my published papers on the subject.

First, in more than 5,000 of my own trials, the randomization was indeed "structureless," and was carried out by each starrer before each trial by tossing a coin (Sheldrake 1999, Tables 1 and 2). The

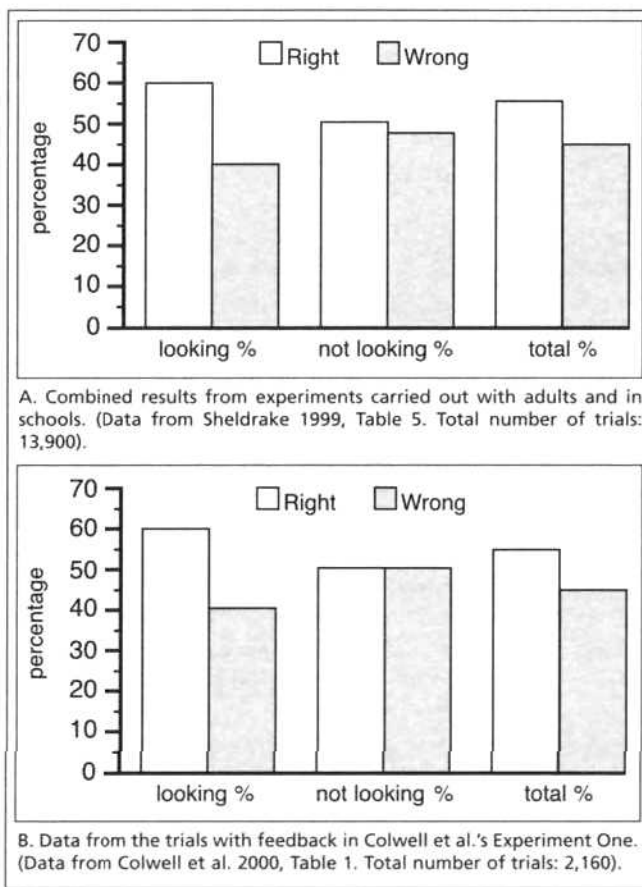


Figure 1. Percentages of correct and incorrect guesses in experiments on the feeling of being stared at. Data for looking trials, not-looking trials, and the overall totals are shown separately.

dom sequences. Sure enough, this time there was no significant overall positive score, although in two of the three sessions there was a highly significant excess of correct guesses in the looking trials.

At first sight, the overall non-significant result seems to confirm their hypothesis. But Marks and Colwell (2000) omitted to mention the crucial fact that in Experiment Two there was a different starrer, David Sladen. Can we

same was true of more than 3,000 trials in German and American schools (Sheldrake 1998). Thus the highly significant positive results in these experiments cannot be "an artifact of pseudo randomization."

Second, when I developed the counterbalanced sequences that Marks and Colwell describe as pseudo-random, I changed the experimental design so that feedback was no longer given to the subjects. Since the pattern-detection hypothesis depends on feedback, it cannot account for the fact that in more than 10,000 trials without feedback there were still highly significant positive results (Sheldrake 1999, Tables 3 and 4).

Conclusions

In spite of their prior assumption that an ability to detect unseen staring must be illusory, both Baker (2000) and Colwell et al. (2000) in their first experiments obtained unexpected positive results

consistent with such an ability. They attempted to dismiss these findings with question-begging arguments. In their second experiments, which gave the non-significant results they expected, an investigator with negative expectations acted as the starrer. This arrangement provided favorable conditions for experimenter effects, already known to occur in staring experiments (Wiseman and Schlitz 1997). Both Baker and Marks and Colwell also failed to mention a large body of published data that went against their conclusions. In short, their claims were misleading and ill-informed.

Acknowledgment

I am grateful to Brian Evans for helpful comments on a draft of this article.

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Robert Baker Replies to Sheldrake

ROBERT A. BAKER

Sometimes efforts to clarify and explain only lead to further confusion. This seems to be the case in my efforts to answer Sheldrake's questions about my "Staring" article (SI March/April 2000).

In my first demonstration Sheldrake argues that the three subjects (Ss) who "stood up, looked around, shifted their positions several times, and appeared to be momentarily distressed . . ." still could have been aware of being stared at. Sheldrake also states "a sensitivity to being stared at does not necessarily imply an awareness of the position of the starrer." True, but "being momentarily distracted, etc." does not prove the Ss knew they were being stared at either! A distraction could have myriad causes. As for the two others (i.e., the "para-

noid" and the "psychic") where is the evidence they are "more sensitive than most" to the detection of being stared at? How are "psychics" and "paranoids" identified and evaluated?

In my second demonstration Sheldrake argues there are pairs of unexplained numbers (e.g., 0801, 0802, etc.). By no means are these numbers "unexplained." On page 38 of my SI article a sample subject's time sheet clearly states time in minutes from start at 0800 pm and then lists 0801, 0802, etc. through 0820. Since each S's starting time differed from other Ss, there were different numbers for each S. The time sheet on page 38 was merely an example.

I can unequivocally state that none of the experimental Ss had any difficulty

understanding what they were supposed to do and acted appropriately.

Sheldrake was correct however in the fact that on the sample time sheet on page 38 of my SI article the last line of the text states "five times for two minutes each during the experimental period." This, of course, is an error. It should have read "for one minute each. . ."

Sheldrake's argument that by allowing Ss to change their prior guesses would distract them from their immediate feelings I find totally unconvincing.

Finally, Sheldrake's attempt to shoot down the results of my two demonstrations has failed completely and I stand firmly with my original conclusion that "it is prudent to conclude that people cannot tell when they are being stared at."

Fooling and Falling into the Feeling of Being Stared At

DAVID MARKS and JOHN COLWELL

Sheldrake is convinced that his research indicates that many people "have an unexplained ability to detect stares." Sheldrake appears to be impervious to the suggestion that his research was poorly controlled and his results created by implicit learning of pseudo-random sequences. Yet that is the truth of the situation, as we show below.

Falling into the feeling that detecting stares is a genuine ability, Sheldrake has fooled himself with his flawed methods and fervent beliefs.

The Alleged Robustness of Detecting Stares

As pointed out in our earlier article, Sheldrake repeatedly has used insufficient controls in his research to ensure acceptable internal validity, and his results are in serious doubt. There can be little confidence in data supplied by anyone when there is no knowledge of the conditions under which they were produced. 20,000, or even 20 million, inadequately described or poorly controlled trials may well appear to be "positive, repeatable, and highly significant" but they count for nothing. The *quality* of evidence is much more important than its *quantity*.

Implicit Learning

Sheldrake claims that the linear trend of improvement in Colwell et al.'s (2000) Experiment 1 cannot be due to implicit learning, since this mechanism would have produced improvement in non-

staring as well as staring trials. As Sheldrake notes, an explanation for the detection of staring but not for non-staring in Experiment 1 was suggested by Colwell et al. (2000). The task was to detect unseen staring and so participants were likely to focus on the detection of staring trials. Given the clear evidence of structure in Sheldrake's sequences, it

would be possible for implicit learning to produce improvements for both staring and non-staring trials. However, this would have involved more cognitive effort, possibly beyond the participants' capabilities. Also there is evidence that participants find it easier to detect patterns and structure for events than non-events. For example, Marks (1970) observed that "a run of events has more effect in determining subsequent predictions than a run of 'non-events' (i.e. absences)." This was found to be the case in binary guessing behavior when the structural characteristics remained constant for events and non-events. Thus a sequence of stares, with feedback, is likely to be associated with implicit learning in which response patterns will eventually match stimulus patterns. The sequence of non-stares, on the other hand, is less salient and its patterning less easily learned, exactly as Sheldrake and Colwell et al. (2000) have found.

The Influence of the Starer

Sheldrake claims that the lack of an effect in Colwell et al. (2000) Experiment 2 could have resulted from the change of starrer, not from the use of properly randomized, structureless sequences. Sheldrake argues that the ability to detect unseen staring is so prevalent and strong (a large effect) that it can be detected in one sequence of twenty trials with no feedback. The first three sequences in Experiment 1 were tests of these claims, but they also provided a direct test of SS's ability to "facilitate" detection. The improvement in detection found in the later sequences coincided with feedback, which contained information on structure in the sequences. Thus in Experiment 1, the availability of information about the structure was varied, but the starrer was kept constant, suggesting that the effect was due to the manipulation of information about the structure.

A second starrer, David Sladen (DS), was used in Experiment 2 because the original starrer, Sadi Schroder (SS), was unavailable. Sheldrake suggests that the two starrers may have differed in their beliefs concerning the ability to detect unseen staring. In reality such differences were very slight. SS was inclined to think that an effect would be found. DS approached the task with an open mind and was very receptive to the possibility of finding paranormal phenomena. DS joined the research at the beginning of Experiment 2 and was not familiar with the results of Experiment 1. In sharp contrast to Sheldrake's

suggestion that DS could have been expecting a non-significant result, DS was *unaware of the hypothesis*. It should be added that John Colwell, the principal investigator, was also open to finding the staring detection effect in both experiments. Only DM was skeptical from the very beginning, and he was not present during any of the experiments and did not participate in any of the analyses. Thus Sheldrake's point about the change of starrer is a complete red herring.

Structureless Sequences

A final point raised by Sheldrake concerns his claim to have used structureless sequences in which evidence of the detection of unseen staring was found (Sheldrake 1999). In fact this alleged lack of structure was assumed, and not actually tested, since the sequences were devised by tossing a coin. It is accepted that this method does not produce random sequences, and the interested reader is referred to the comprehensive discussion on testing for randomness by Knuth (1997).

Conclusion

Sheldrake's paranormal claim about the detection of staring is unsupported by the evidence. Much of Sheldrake's research has used pseudo-random sequences which enables pattern learning to take place, creating above-chance-level guessing rates for the detection of stares. These rates are enhanced by the addition of feedback. In falling into the feeling that detecting stares is a genuine ability, Sheldrake has fooled himself with his flawed methods and fervent beliefs.

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The Face Behind the 'Face' on Mars

Thanks to Gary Posner for the discussion of Richard Hoagland and the Face on Mars cult ("The Face Behind the 'Face' on Mars," November/December 2000). I can provide some additional perspective on Hoagland's March 20, 1990, speaking engagement at NASA Lewis (now Glenn) Research Center in Cleveland. First, it is worth noting that of all the NASA Field Centers, Lewis (which specializes in research and development on space propulsion and power technology) is probably the least likely to have any planetary scientists on its staff, or to be sensitive to the issues surrounding the Face. Hoagland's own rather breathless description of these events in *The Monuments of Mars* (epilogue to the second edition, 1992) tells how NASA Lewis staff quickly back-pedaled after his talk, presumably reflecting discussions with better-informed people at NASA Headquarters. It is also interesting to read how Hoagland discusses his "PBS interview" at Lewis. As noted by Posner, this was not a PBS interview, but an interview to collect material that might be used for a NASA Lewis series of television productions that were made available to stations that wanted to use them—mostly small cable outlets.

Shortly after the Lewis talk, Hoagland arranged an invitation to NASA Ames Research Center in Silicon Valley (which does specialize in planetary science and exobiology). His approach was, I think, interesting. Ames has a meeting room seating about 60 people in an "off-site" location within its visitor center. This meeting room was sometimes made available to staff on a noninter-

ference basis. Two of Hoagland's supporters reserved this room for a "Mars meeting" and invited him to speak. The Ames Center management and Public Information Office did not know about this talk until announcements appeared a few days in advance on bulletin boards around the center. Wishing to avoid a repetition of the fiasco at Lewis, Ames withdrew the use of the room in the visitor center.

The issues here are complex. NASA has no wish to deny Hoagland or other pseudoscientists the opportunity to speak and publish their ideas. There is also something to be said for the educational value of controversial speakers, a justification used for his invitation to speak at Lewis. However, it is not desirable for such people to infer NASA endorsement or use supposed NASA connections to legitimize their ideas, as Hoagland has done in the case of his speaking engagement at Lewis Research Center.

David Morrison
Saratoga, California

Richard Hoagland is a great speaker and with his background sounded incredibly believable on his theories about the Face on Mars. I even made the terrible mistake of purchasing the video about the Face on Mars for \$29.99. Now that it was discovered that the Face of Mars was truly a trick of light and shadow, I want Richard to send me my money back. But I know that will never happen. It doesn't surprise me to learn that Hoagland takes credit for the greeting plaques on Pioneer 10 and 11. I salute Carl Sagan and Frank Drake for being the true designers of the plaque. I hope Hoagland takes a long hike up the Himalayans and doesn't return for the next twenty years, but with our luck he'll claim he found Shangri-la. SKEPTICAL INQUIRER Vol. 24 #6 issue makes the perfect Christmas stocking stuffer!

Paul Dale Roberts
Chief, LADWP Unit/
CLASS Help Desk
Department of Community
Services and Development
Elk Grove, California

At the risk of soiling an icon—St. Carl Sagan—I would like to report that Richard Hoagland perhaps inadvertently got some backing from Sagan, who did not stop at referring only "metaphorically" to the so-called "pyramids of Mars." On page 130 of the hardcover edition of *Cosmos*, Sagan does,

indeed, describe the structures as "beckoning pyramids" in the text—but in a footnote he says the following: "They seem eroded and ancient and are, perhaps, only small mountains, sandblasted for ages. But they warrant, I think, a careful look."

Note he does not say that they "might" be something artificial; he says they "might" only be natural eroded features. A slip of the typewriter, perhaps—but one can hardly blame people of the mind of Hoagland for grabbing this ball and running with it.

Michael L. Nardacci
Albany, New York

Had author Gary Posner spent as much time and effort on examining aspects of the 1998 Mars Global Surveyor image of the "Face" as he did on exposing the character flaws of the "gifted speaker and author" Richard Hoagland he would have discovered the following: a) the high-pass filter used by JPL in this initially released enhancement (Figure 2 of Posner's article) removes visual cues to the true height and shape of the object. (The high shadow-producing central facial features thus look like they have been smashed by a giant foot. To get a clue of the true height of those features, SI readers, look at the long shadow displayed in the Viking image given by Figure 1 of Posner's article). b) the image was taken through a winter haze producing a low-contrast image. . . c) the Sun was from the southeast under the "chin," further distorting the image. (Recall the effect on a facial image of a flashlight directed from below the chin.) d) The image was taken from a 45-degree angle, unlike the original Viking image which was almost a nadir shot. This makes a naive comparison with the Viking image difficult. e) That, nevertheless, the MGS image of the feature displays secondary facial features (such as nostrils) not seen in the Viking shot and virtually ruled out on the basis of chance. f) That re-imaging the "Face" from overhead and under better lighting conditions is being given the highest priority.

This SKEPTICAL INQUIRER article, the earlier one (July 1998) by David Morrison of NASA Ames, and the reports of numerous network and news organizations in April of 1998 displayed this same faulty enhancement of the "Face." (I note, however, that not all periodicals used this initial enhancement. The one shown by the *Planetary Report* [a periodical put out by the Planetary Society] is a truer representation.)

Skepticism is a very important scientific tool. However, it must be used without bias.

Horace Crater
President—Society for Planetary
SETI Research (SPSR)
The University of Tennessee
Space Institute
Tullahoma, Tennessee

(Author Gary Posner prepared a Follow-Up column about the Mars 'face' matters. It will appear in our next issue.—ED.)

Just couldn't help making a comment on the "Face on Mars" article. I've seen depictions of that Pioneer 10 plaque before, and as always, I'm amazed. . . .

It was a great idea to put that plaque on a vehicle leaving the solar system, but I've always hoped that the plaque we actually sent had just a *little* bit different sketch of the lady than the picture we're always shown in the media. Because otherwise, if intelligent aliens ever really find that, and have any concept of mammal anatomy, they will have no idea how humans could ever get born.

It would be incredible, in something created solely for viewing by another species, to omit an item that critical to us. I never cease to marvel over how terrified our culture can be of one small, perfectly normal body part. Surely Carl Sagan would not have let it be sent that way!

Kelvin Flory
Ottawa, Kansas

Why Bad Beliefs Don't Die

Gregory W. Lester asked "Why Bad Beliefs Don't Die" (November/December 2000). Some other answers are admirably explored in *Expecting Armageddon: Essential Readings in Failed Prophecy*, edited by Jon R. Stone (Routledge: New York and London, 2000). First of all, bad beliefs are usually part of a complex ideological system; for example, when Jesus Christ did not usher in the Last Judgment on April 23, 1843, as preacher William Miller had predicted, his followers drew on many other shared beliefs and experiences (for instance, the importance of avoiding sin and the catharsis of banding together in prayer groups) to comfort themselves amidst the failure of Miller's prophecy. Thus, instead of being deprived of a core belief, the adherents usually feel they have simply lost one of many equally important beliefs. And while one prediction may fail, others will be fulfilled by random chance alone, so long as the prophetic leader is shrewd enough to make multiple (and flexible) forecasts of future events.

Secondly, when beliefs are disconfirmed, their adherents simply revise them spontaneously and retroactively; for example, if the world did not end physically on a certain day, then it must have ended spiritually, and we the believers are now the enlightened citizens of the world beyond. (Or, perhaps, we did not "deserve" to have the prophecy fulfilled; thus, the prediction was rendered false by our own failure, not that of the prophet.)

Finally, beliefs survive best when their adherents feel they are part of a cohesive community; an ideologue who gives his followers a sense of "belonging" has already won the battle against skeptics who seek to disconfirm his teachings. His followers can simply point to all the other members who still endorse the beliefs, prophecies, or principles that have not (yet) been disproven. The more of these people there are, the greater the "proof" that the leader speaks the truth. "How could so many of us all be wrong?" the believer will ask.

Skeptics who criticize illogical group beliefs need to be aware of these realities. . . . More importantly, skeptics need to remember that the people who buy into such beliefs are seeking a sense of meaning in their lives. The reason they so viciously resist the assault of logic is because they cannot bear to be stripped of their sense of belonging. Their devotion to the charismatic founder of their group makes them feel both protected and privileged, often for the first time in their lives. . . .

Jason Zweig
Investing Columnist
Money Magazine
New York, NY

Gregory Lester presented a thought-provoking but unconvincing evolutionary just-so story ("Why Bad Beliefs Don't Die," November/December 2000) to explain the resilience of beliefs in the face of evidence to the contrary. If the brain only cares whether the belief is helpful for survival then it could as easily be argued that changing beliefs according to evidence would have survival value. Whatever the reason(s) for the brain's reluctance to alter beliefs I suspect it's more complex than Lester would have us believe. An emphasis on survival doesn't explain such things as suicide and participation in dangerous sports where the brain is accepting things at odds with survival.

I would also point out that following a statement with the word *period* does not magically imbue that statement with irrefutable truth.

Dene Bebbington
Reading, England

Lester's truly superb piece is exceptionally insightful but *who* did the designing of how beliefs function, i.e., "This means that beliefs are designed to operate independent of sensory data," and, in reference to data and belief, "They are designed to be able to disagree." I do not believe that anything or anyone "designed" any of this functionality. "Evolved," yes, "designed," no! So, while Lester makes brilliant sense, he in no way truly explains how this all came to be. Was belief "designed" by a creator or did it evolve? And, if it evolved, I'd like a little additional insight as to how it came to be.

Larry Hellyer
Oswego, Illinois

Gregory Lester writes about the adaptive role of beliefs in the human repertoire of brain functions. A sense of purposefulness runs through his entire article. Words and phrases like *supposed to*, *so that*, and *purpose* imply intent or design. They are teleological. There is no empirical evidence that natural processes are teleological, Intelligent Design creationists notwithstanding.

The English language has no easy way to distinguish between statements of functionality and purposefulness. "Vertebrate teeth have hard enamel on their surfaces *so that* they suffer less wear" is an example. In German, for instance, this confusion is avoided because there are two phrases that mean *so that*, *da mit* (purposeful) and *so dass* (functional) which allow the German writer to convey the exact meaning of the sentence.

Lester implies a purposefulness in the evolution of brain function that he almost certainly does not intend. He is not alone. Nearly everyone who writes in English about evolutionary biology for a popular audience commits the same error. I have spent thirty-five years trying to disabuse my students of their unconsciously teleological thinking. It is like pulling teeth to get them to understand the distinction I made above.

As skeptical thinkers, writers, and teachers we need to be much more careful about teleological phraseology because the muddle is built into this language.

Jim des Lauriers
Department of Biology
Chaffey College
Alta Loma, California

I really enjoyed Gregory Lester's article. He makes a strong case that even in the present day, a system of strong beliefs improves

chances for survival. Therefore, I must conclude that evolution will see the end of skeptics and a biological shift toward true believers. It looks like their beliefs really will save them.

Brian Gould
Plainsboro, New Jersey

The article presents some interesting ideas on why people are reluctant to change their beliefs when presented with disconfirming evidence. However, I find it surprising that this article appeared in your magazine.

The proposed mechanism for reluctance to change one's beliefs is presented in a very dogmatic fashion. For example, the description of beliefs as internal maps of those parts of the world with which we do not have immediate sensory contact, and the manner in which this protects us from unseen danger, is presented in a way that seems to imply that these are proven facts.

While it is interesting to speculate on why people do what they do, the science of psychology can currently only speculate on this question. Most of the statements so definitively presented by Lester are not provable. An example is the assertion that "the whole survival value of beliefs is based on their ability to persist in the face of contradictory evidence." It sounds reasonable, but how do you test it?

The survival behaviors described could also be explained by other mechanisms, such as conditioned responses. No reason to prefer his postulated explanation is presented.

There is no discussion of any specific observational or experimental science, and there are no references whatsoever.

Lester discusses beliefs as a means of providing information on reasons for things for which there is no sensory data. Ironically, one could infer that since there is no sensory data supporting his proposed reasons for why beliefs persist, then his explanation for this phenomenon is itself a belief. This would suggest that my argument is unlikely to shake Lester's faith in his theory.

Joseph A. Borrello, M.D.
Portage, Michigan

Gregory Lester does not make a good case for his thesis that "... beliefs are designed to enhance our ability to survive..." Lester does not define a belief aside from his reference to its being "the name we give for a survival tool." Furthermore, the examples given (such as the car in the garage—which is more of an example of knowledge than

belief) are vague, and, I submit, do not address the essence of a belief, nor the connection between belief and survival.

I offer the following stronger argument. To paraphrase the dictionary, a more useful working definition of belief is a worldview based on limited data. For example, if one observes that event A is correlated with another event B, a belief would be the conclusion that A is the certain cause of B. If the belief, true or false, does not threaten the believer's life, there are no negative survival consequences. If the belief is true, the believer can use the belief to avoid the deadly event B by making the appropriate response (such as fleeing) as soon as A is observed, thereby enhancing his or her survivability. It can be argued that natural selection will favor the individual who makes many causal associations and sticks with that worldview even when the consequence of A is sometimes observed to be benign. Natural selection should further favor offsprings who effectively learn the worldview of their parents and their society.

Mark G. Kuzyk
Department of Physics
Washington State University
Pullman, Washington

As I read Gregory Lester's "Why Bad Beliefs Don't Die" I found myself very much distressed by his arguments. For starters he calls hypotheses "beliefs" and I don't agree with this misuse of terminology. After he does this he very smoothly works his arguments to a conclusion. People make hypothesis about data all the time. My cat hypothesized that when the can opener hummed it was time for dinner. We often keep a bad hypothesis for awhile, but usually we jettison it after sufficient data proves us wrong. Survival in the wild certainly demanded that people make changes in their hypothesis quickly or they faced death. From an evolutionary point of view adaptability to changes in environment and climate certainly dictated against holding detrimental hypothesis. If a person left a tool or a car in a certain location, they expect it to be there when they return. This is not faith or belief, just an expectation based on past experience. An hypothesis can certainly become a belief.

This occurs when a person ignores contradictory evidence and has faith in a particular idea. This common error in rationality does not seem to have any survival value *vis a vis* the rest of the world. However, in dealing with social pressures there might be some value in obedience to a leader or for a child

in its parents and the beliefs supporting their authority. Then again, belief may not have any survival value after childhood, but once ingrained it is hard to dislodge. It may just be along for the ride, like our appendix. . . .

Harley A. Brown
hbrown@mail.nac.net

Gregory Lester replies:

I think Mr. Zweig's comments are terrific. He cogently points out that replacing a threatened belief with another that serves the same ideological purpose is common. I fully agree and it is consistent with my point. In fact, in psychotherapy it often works best not to dispute a problematic belief so much as to offer a replacement belief that is similar but more benign and functional.

As to Bebbington's comments, I quite agree that changing beliefs in response to data can have survival value. The reason I didn't discuss it in the article is that beliefs changing in response to data has an obvious logic, and I was addressing the issue that tends to confuse people—why beliefs sometimes don't change in response to data. It may also very well be true that the issue is more complex than what I present, but the article had to be relatively short so I presented only the basics.

I do think the statement that my theory does not explain such things as suicide and dangerous sports is rather precisely wrong. I think my theory is the only one that does explain these things effectively. The only way the brain—which is entirely set on keeping us alive—can generate self-destructive behavior is by experiencing even damaging beliefs as having survival value and therefore being worth acting on.

As to the comment that use of the word "period" does not "magically imbue a statement with irrefutable truth," I could not agree more. I think it is unmistakable that my purpose in using the term was to create emphasis and intensity, not to invoke The Truth of the Gods. As a result, I find the comment to be a way of expressing anger toward me by insulting my writing style rather than a sincere attempt to correct a possible misunderstanding. My apologies for using terms that make you so mad.

Mr. Hellyer and Mr. des Lauriers both make a fine point that my use of the word "designed" lacks sufficient semantic specificity, especially for a readership for whom the term is frequently associated with the idea of a supernatural entity looking things over and deciding how something should work. I appreciate Mr. Hellyer's insight that I did not intend that particular meaning. I will be more careful about my phrasing in the future.

I assume Mr. Gould's comments are tongue-in-cheek, in which case I appreciate the chuckle

and his fine sense of humor. If the comments are in fact serious, I think that effectively responding to a thought process that could generate such conclusions requires more time, space, and corrective psychological attention than I can offer here.

If I am reading between the lines accurately, I think Joseph A. Borrello, M.D. presents the valuable suggestion that my ideas be scientifically tested. I would like nothing better. But despite his discomfort that suggests a puzzling unfamiliarity with both scientific theorizing and *The SKEPTICAL INQUIRER's* role in facilitating thoughtful discourse, my article's tone is quite appropriate and usual for what it is—an attempt to make a case for a particular theory.

Nevertheless, be assured that I would welcome data that confirms or refutes my ideas. And contrary to what I find to be his out-of-place, nasty personal accusation that I am constitutionally incapable of believing anything at variance from what I have written, credible disconfirming data could entirely and completely change my mind, as it has on any number of occasions. I might even be inspired to write a new article contradicting my current position that offers Mr. Borrello an additional opportunity to publicly display what in my view is clearly haughty, demeaning arrogance disguised as rational discussion. Accusations involving pots and kettles aside, I tell you what—I'll take seriously your criticism of the "tone" of my article once the tone of your comments approaches something resembling appropriateness, OK?

I feel that Mr. Kuzyk's comments, while purporting to refute my position in favor of a "stronger" argument, actually present ideas entirely consistent with my own. What he refers to as "causal assumptions" are what I call beliefs. Forming them on "limited data" is precisely what I'm saying happens. I think the issue between us is a difference in terminology rather than a genuine disagreement.

I greatly appreciate and agree with Mr. Brown's helpful distinction between "hypothesis," "expectation," and "belief." In the article I was trying only to distinguish beliefs from sensory data, so I used the terms interchangeably. But I think he is right that there are important differences between the words, and I appreciate his pointing that out. Unfortunately, he himself goes on to make exactly the same type of error by using the term "faith" indistinctly and misleadingly, inadvertently destroying the very point he seeks to make. We all fall into it, don't we?

Finally, I think his point that bad beliefs may be artifacts that have essentially outlasted their practical survival value is absolutely on-target.

In fact, my article was designed to address that very thing—the reason they are so hard to get rid of once they have outlived their practical utility.

New Paranatural Paradigm

I very much enjoyed "The New Paranatural Paradigm" by Paul Kurtz (November/December 2000) and I feel that I have made an accidental discovery that is relevant to the near-death experience.

I am a paramedic with nearly twelve years of EMS experience, with much of that centered around nonemergency transports from healthcare facility to healthcare facility.

I recently transported an unfortunate man (who was dying from metastasized pancreatic cancer) from a hospital to a hospice facility. The patient had received large doses of narcotic pain medication, and my partner and I were wheeling him through the hospital on our stretcher while carrying on a conversation with him.

He stopped talking when we entered the elevator, and laughed a little stridently when we left the elevator at the ground floor.

I asked him to share the joke, and he told me that he had just had an out-of-body experience. He described, in vivid detail, the sensation of floating above his body while looking down at himself. He was convinced that he had died on my stretcher, and described the incident in such ghastly terms that he had the hairs on the back of my neck standing on end. We returned to the same hospital later that night for another call and I, naturally enough, looked up at the ceiling in the elevator—this was something I have never had any reason to do before.

I couldn't stop laughing when I discovered that the elevator had a mirrored ceiling. Evidently, the euphoria of the narcotic pain medication combined with the downward motion of the elevator (this causes a sensation of falling) and the reflection from the mirrored ceiling created a vivid, out-of-body experience for my patient.

I know that this may seem like nothing more than an amusing anecdote, but it would be interesting to see how often mirrored ceilings are used in hospitals and nursing homes. Perhaps this explains why so many people from different backgrounds report similar sensations with out-of-body experiences.

Kevin Levites
Boynton Beach, Florida

Worlds in Collision

Benjamin Radford's article ("Worlds In Collision," November/December 2000) raises a number of interesting points I don't

believe I've read before. Specifically, asking what would it mean to the real world if there were such things as telepathy, clairvoyance, etc. He mentions the staggering questions about privacy, ethics, and destiny versus free will, among others. But why stop there? For all the studies and experiments involved in the paranormal, I ask simply: Why has no one ever come up with "supernatural laws"?

We've known of natural laws for centuries, but no one seems to have explained, for example, how ghosts are supposedly able to walk through walls, yet physically pick up objects. It's my opinion that since no one has come forward to become a "psychic Isaac Newton" and list a set of "supernatural laws," coupled with Mr. Radford's well thought-out arguments, yet another nail is hammered into psi's coffin.

Rich McGuigan
Florence, Kentucky

Benjamin Radford says that individual responsibility and free will are incompatible with determinism. He evidently believes that we are free and morally responsible, therefore that human behavior is not subject to deterministic causal laws. What is the alternative? If such laws do not hold, then our actions are to some extent independent of the combined effects of heredity and environment. This is to say that they are to that extent random, i.e., a matter of chance. But that is not what is wanted by most of those who share Mr. Radford's view. What he and they need, although they may not be aware of it, are ghosts: each person is inhabited by a non-material essence, or soul, that is the true cause of his actions. When he must make a moral decision, his ghost reaches into the world from its astral plane and produces tangible effects. This theory is consistent with a religious world view, but I suspect that many (among *SI* readers, at least) would be uncomfortable with it.

I am a puppet only if someone (human or superhuman) is compelling me to act in a manner contrary to my own desires and decisions. There is no evidence that this occurs, and it is not implied by the deterministic hypothesis, although it does follow from that hypothesis that my desires and decisions are themselves the results of prior causes.

I have discussed this topic at greater length in *The Rocky Mountain Skeptic*, May/June 1996.

David A. Shorwell
Alpine, Texas

... If we did live in a world where magick could and did work, it would be part of our lives. Magick would be a normal, accepted part of our world. It would also be extensively studied, its workings and laws laid out. There would be a Theory of Magick, and laws describing its mechanics, much as Newtonian mechanics describe planetary orbits. It would also be in extensive use and greatly impact our lives. ... Magick and science would be complementary, and not antagonistic. ... Gentlefolk, any world where the paranormal, preternatural, supernatural, magickal was real would be a substantially different world. It might resemble ours superficially, but much of its culture and science would be alien to us, built using tools that exist only in stories in our reality. ...

Alan Kellogg
San Diego, California

The Mead/Freeman Follow-Up

The Follow-Up column about Margaret Mead by Derek Freeman (November/December 2000) inadvertently highlights the importance of context. If the SKEPTICAL INQUIRER had not printed Paul Shankman's reply along with Freeman's column, I would not have been able to make sense of why Freeman asserted that certain evidence was crucial. Freeman's failure to provide the needed context suggests that he has become focused on this issue to the exclusion of all else, and thus fails to recognize that not everybody recalls the details.

In his "brief report" Freeman seeks to prove that Mead's work is based on flawed evidence. Here again, context is all important. In a mathematical proof you provide your own context via definitions. In the sciences there are (often tedious) sections on methods, and it is not uncommon to find that a difference in result is due to a seemingly insignificant (and sometimes undocumented) difference in method. Freeman states that Fa'apua'a and Fofoa were unreliable sources, and then goes on to claim that since Mead talked to them, all of her work is wrong. However, he fails to disclose the remaining context—such as who else did Mead talk to? What other information did she have? How consistent was it? And so on.

The disturbing subtext is that the context Freeman does quote—references to Boas' and Mead's extreme environmentalist conclusion—suggest that Freeman is more interested in finding evidence for a particular viewpoint

than in trying to understand the actual data. Conclusions in the sciences, and especially in the social sciences, depend on such a wide web of evidence that one can almost always find some part that appears to support whatever claim is desired, especially when taken out of context of the evidence as a whole. Selectivity, and errors of logic, are the primary causes of bad science, and pseudoscience.

I am not an expert on anthropology, so I cannot wholly judge the Freeman/Mead controversy. But I certainly form an impression, and it is not favorable to Freeman.

Robert Clear
Rhamphorynchus Society
Berkeley, California

Justifying Criticism of Special Relativity

In his restrained reply to my defense of our Natural Philosophy Alliance (NPA), Ralph Estling errs in accusing us of opposing most of nineteenth-century physics, as well as that of the twentieth century (Follow-Up, November/December 2000, pp 60–61). "Modern physics" usually refers only to the latter. Nearly all dissident physicists endorse, e.g., nineteenth-century conservation laws; and so also, by the way, do nearly all "new energy" researchers.

I must decline his invitation to send a detailed refutation of special relativity (SR) to his "very nice" physicist friend, who might explain things to me "if he has the time." I know enough scholars "competent" in physics already, among the more than 1,000 dissidents now active (nearly 200 of whom belong to the NPA). But I do wish to support my article by citing a few sources for use by the readership of SI.

As a start, one might consult my introductory comments on defects in SR found on the NPA Web site, (<http://members.home.net/saiph/npahome.html>). Much more thorough is the 1998 volume of essays *Open Questions in Relativistic Physics*, edited by NPA member Prof. Franco Selleri of the University of Bari in Italy, and published by Apeiron in Montreal; it is replete with other citations. (*Apeiron* is also the name of one of the leading dissident physics journals; it is on the Internet at <http://Redshift.vif.com>.)

One may read about recent experiments contradicting SR in Peter Graneau (an NPA member) and Neal Graneau, *Newtonian Electrodynamics* (Singapore: World Scientific, 1996).

The most amazing of the logical contra-

dictions in SR literature are in Einstein's famous 1905 thought experiment, then claimed and still believed to prove "relative simultaneity." In *Dialectica* (Switzerland, 1962), philosopher Melbourne Evans showed this argument is based on illicitly assigning two different velocities to the same light beam; and also that it contradicts the second postulate of SR itself. I will send an outline of Evans's brilliant critique to anyone writing to the address below.

Also published by Apeiron in 1998 is an important new way to interpret cosmic red shift: *Seeing Red* by the NPA's Halton Arp—a leading astronomer forced into exile in Germany after his career in the U.S. was destroyed by censorial intolerance.

Please bear in mind, dear reader, that as Deborah Frisch recently wrote right here in SI (May/June 2000, pp. 34–39), the true skeptic may properly be skeptical of the views of *ordinary* skeptics—who include many uncritical believers in SR.

John E. Chappell, Jr.
Director, Natural Philosophy
Alliance
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Kendrick Frazier replies:

We recognize that there is a dissident faction on the outskirts of science that seeks to refute special relativity, and we publish John Chappell's letter (now his second) in the interests of fairness. But in general, the proper place to present evidence and carry out these arguments (if there is a legitimate case to be made) is in the appropriate journals of physics.

—EDITOR

Handling of Alternative Medicine Letters in Science Magazine

In the November/December 2000 SKEPTICAL INQUIRER ("Articles of Note" section), a "selection of views" on alternative medicine published in the July 14 issue of *Science* magazine was included. I would like to inform the readers of SI of the shabby handling of that "views" section by *Science*. Not only was mystical New Age alt-physician Lewis Mehl Madrona given nearly one full page to portray himself as just a normal "doc," but my own letter to *Science* was emasculated of its essential purpose by the *Science* editors without my permission.

Dr. Mehl-Madrona had threatened to sue *Science* in response to a mention in a June *Science* article of the scandal that led to his leaving the University of Pittsburgh Medical Center (July/August SKEPTICAL INQUIRER). *Science*, flagship of the U.S. scientific community, then capitulated to his threat by giving him a lengthy, uncommented-upon letter in the "views" section in which he denied that anything untoward had ever happened in Pittsburgh.

At the same time, I had sent *Science* a strong letter complaining about their reporter's mischaracterization of Mehl-Madrona's cancer-healing treatments as "massage." *Science's* editors then gutted my letter by transforming it into a general complaint about the dangers of alternative medicine while removing all my criticism of their original article and of Mehl-Madrona's practices, the very purpose of the letter—again, without my permission. Their version of my letter was printed immediately after Mehl-Madrona's own apologia, in which, among numerous misrepresentations, he claims to be "solidly a part of conventional medicine."

For the interest of SI readers who have been following alternative medicine and the career of Lewis Mehl-Madrona in particular, here is the section of my original *Science* letter that was excised:

The article "Bastions of Tradition Adapt to Alternative Medicine" (6/2/00) . . . understates the erratic claims of some of Andrew Weil's new breed of "Integrated Medicine" doctors. I was named in that article as the consumer advocate who had a role in forcing the resignation of the University of Pittsburgh Medical Center's Complementary Medicine Director, Dr. Lewis Mehl-Madrona. As someone who has intensely studied this particular doctor's medical ideology, I was disappointed that the reporter inaccurately referred to one of this doctor's cancer treatments as "massage therapy," a therapy which sounds quite innocuous.

In fact, Mehl-Madrona's "massage therapy" as reported in his book *Coyote Medicine*, actually consists of a psychotherapeutic method of removing traumatic memory imbedded, according to him, in a woman's pelvis. This "memory" was putatively a cause of her advanced ovarian cancer which had spread to six sites. After a series of intense sweat lodge sessions, combined with "deep" massage and regression techniques, he claims to have successfully removed the cancer-causing memories. According to him, her cancer totally disappeared within weeks, though this is not documented.

In another nondocumented account, Dr. Mehl-Madrona participates in a channeling session where the spirit of White Buffalo Calf Woman appears in order to untangle an advanced prostate patient's brainwaves "as a weaver might untangle

yarn on a loom." This patient's cancer too appears to have been cured.

Dr. Mehl-Madrona—the protégé of Andrew Weil—has also been a former editor of the *Journal of Regression Therapy*, the journal of the Association for Past-Life Research and Therapies, Inc. In that journal he has published an article where he claims to have successfully treated a young woman for diabetes using past-life-regression therapy.

These regression techniques are hardly standard "massage therapy" or "visualization"—indeed this is New Age psychotherapy making outrageous claims for physical as well as psychological healing powers.

E. Patrick Curry
Pittsburgh, Pennsylvania

Hoax and Delusion on Comoros

From my duty station in the Indian Ocean (I am working with the UN Development Program and hence living there) in Comoros (these tiny specks halfway between Madagascar and the African continent and one of the poorest countries in the world) I bring you some news about another hoax and beautiful case of mass delusion.

Comoros is a mini-archipelago made up of four small islands of volcanic origin, one of which (the main island) is still active. So far, so good, but for at least a year the rumor has gone around that there is oil to be found here, especially under the still-active volcano. . . . Even the Americans would be on the point of coming over to start exploration, if not on land then offshore! Very interesting if you know that it's a sheer drop from the shore to 10,000 feet and more. . . some real deep-sea drilling!

One doesn't have to be a geologist to see that it's just a textbook case of wishful thinking from people who want to get rich without having to work for it. Oil under an active volcano: a geological miracle of the first magnitude! And even if the volcano were inactive, I'd be very surprised to learn that there is anything other than rock [under it]. I don't know how and when it started, but it's gotten to the point where even knowledgeable people (the few around!) have started saying that there must be some truth behind it. . . .

Best regards and keep up the good work!

Wouter J.K. De Weerd
Program Officer
UNDP Comoros

A Minister's Nonstruggle with Science

In 1934 I began the combined course of study at St. Lawrence University so I could do both undergraduate and graduate work in six years. With excellent high school math teachers I did not have to take freshman math so I went directly into sophomore calculus. At the end of the course I decided a major in mathematics would be a little too specialized for one going into the ministry and so switched to physics and kept math as my college minor.

I was the only "Theolog" ever enrolled in the senior course of Atomic Physics. This was in the late 1930s when the atomic bomb was being worked on. Our professor, John Smith, had helped write our textbook, and periodically he asked us to correct a coefficient in the text because of the latest findings.

Throughout sixty-three years in the ministry I have never had to struggle with the science and religion issues because early in my education I declared I was a naturalistic humanist without need or worry about a "supreme being" pulling all the strings. I also learned that "Theologians evolve their own fog and get lost in it." I trust not too many scientists follow suit.

I have written the above to help readers not to overreact to the "Rev." before my name, and my thesis is that how a person is introduced in the earliest years to the understanding of the universe will affect his or her mature years. One question asked of our church school pupils is: "How old is a drop of water?" And I like to add, "Where do you think it has been?" If my own educational journey was to start again I would hope to fit in some astronomy and microbiology.

Rev. Albert C. Niles
North Sebago, Maine

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



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A Bird's Eye View of a Galaxy Collision

What appears to be a bird's head, leaning over to snatch up a tasty meal, is a striking example of a galaxy collision in NGC 6745. A large spiral galaxy, with its nucleus still intact, peers at the smaller passing galaxy (nearly out of the field of view at lower right), while a bright blue beak and bright whitish-blue top feathers show the distinct path taken during the smaller galaxy's journey. These galaxies did not merely interact gravitationally as they passed one another, they actual collided.

Credit: NASA and The Hubble Heritage Team (STScI/AURA).

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