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SPECIAL 25th Anniversary Section

Skeptical Inquirer

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Parapsychology's File Drawer Problem

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

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Manuscripts, letters, books for review, and editorial inquiries should be addressed to Kendrick Frazier, Editor, SKEPTICAL INQUIRER, 944 Deer Drive NE, Albuquerque, NM 87122. FAX 505-828-2080. For Guide for Authors, see page 64 in the September / October 2000 issue, or send a fax request to the Editor. It is also available on the Web at http://www.csicop.org/si/guide-for-authors.html.

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ARTICLES

BOOK REVIEWS

CSICOP'S 25TH ANNIVERSARY

COLUMNS

EDITOR'S NOTE

We're Too Young for a 25th, and other Delusions

How can it be twenty-five years already since CSICOP, publisher of the SKEPTICAL INQUIRER, was founded? I was there at the founding meeting, April 30–May 1, 1976 (!), but I swear it was only about ten or fifteen years ago. I know I am no more than fifteen years older than I was then. Really! I'm still young. Would I kid you?

Well, despite the apparently relativistic time compression, it has been a wild and eventful, sometimes even amazing, perhaps even fruitful . . . twenty-five years. In this issue we begin our twenty-fifth anniversary observance with the first of several short anniversary sections that we plan to spread over three of the next four issues.

We originally considered a single-subject anniversary-observance special issue, but that would have kept us from giving you our usual variety of substantive articles on diverse subjects. So we are going to try to do both—to take appropriate notice of how this special enterprise all began, with some short features and personal perspectives on what has happened since, and also to present the kinds of critiques and evaluations for which you are reading us in the first place.

This first anniversary section leads off with personal recollections by me and by Jim Alcock, a CSICOP Fellow and member of the Executive Council for that entire time (he's still young too!). One refreshing aspect of Jim's essay: He points out something we rarely emphasize—while a lot of what we do is serious, over the years we've had a lot of fun doing it. (Shhhh! Don't tell anyone!) In future issues we'll hear from chairman Paul Kurtz, the mastermind who started it all, and others. All of these are excerpted from a forthcoming book, *Skeptical Odysseys* (Prometheus 2001), edited by Paul Kurtz in honor of CSICOP's twenty-fifth anniversary. The many eminent contributors to the book could write on any topic, but for these SI essays we've selected several who reflected in very personal terms about CSICOP and the modern skeptical movement itself.

We would be interested in hearing from any readers whose experience with CSICOP and the SKEPTICAL INQUIRER spans all or most of these twenty-five years. We are also interested in hearing from new readers and younger readers for your own perspectives on science and skepticism today. We have renewed ourselves repeatedly throughout our existence. In fact, SI has been in its present format and bimonthly frequency only since the start of 1995, and CSICOP is creating new programs continually. We strive to be lively, dynamic, and vital for the new challenges of the twenty-first century.

* * *

Our regular content leads with Douglas M. Stokes's new analysis of the "file-drawer" problem in parapsychology—how to properly allow for the likelihood that experiments with positive results will be preferentially reported or published. Stokes works within the parapsychological community, but he is an internal critic of the field's statistical methods. His new analysis, supported by his own computer simulations, finds a serious flaw—a wrong assumption—in statistical meta-analyses of experiments traditionally used in parapsychology research. "It is one of those strikingly novel observations that once brought to our attention is obvious," said our reviewer. It may well have significant implications. It would appear to considerably weaken the contemporary case for psi.

Skeptics Challenge Psychic Mediums on CNN's *Larry King Live*

KEVIN CHRISTOPHER

CSICOP Chairman and SKEPTICAL INQUIRER publisher Paul Kurtz and *Time* magazine science editor emeritus Leon Jaroff (also a CSICOP Fellow) appeared on CNN's *Larry King Live* March 6 to discuss mediums. The show proved to be one of the most balanced nationally televised forums for skeptics to debate psychics in recent years. Six other guests appeared on King's program: mediums Sylvia Browne, John Edward, and James Van Praagh, along with Rabbi Schmuley Boteach, retired physicist Dale Graff, and former FBI profiler Clint Van Zandt.

Larry King began by bringing Jaroff's critical March 5, 2001, *Time* article "Talking to the Dead" on John Edward to viewers' attention (see Articles of Note, page 63). He then showed a clip from the Sci Fi Channel's *Crossing Over with John Edward*, in which Edward delivers a child's message from the beyond to weeping parents in the studio audience.

King then quoted a skeptical description of mediumship from Jaroff's article: "It's a sophisticated form of the game Twenty Questions, during which the subject, anxious to hear from the dead, seldom realizes that he, not the medium or the departed, is supplying the answers."

Edward called Jaroff's article "insulting to the intelligence of people in the audience" and "the credibility and the integrity" of those who work on his show. When asked to respond to allegations that Edward's demonstrations were aided by eavesdropping, questionnaires, and crafty editing, Edward replied, "All of that is completely wrong," suggesting that Jaroff had not attempted to interview him or people working on the show. (Jaroff later pointed out when he tried to contact people on the show, he was told that "John Edward does not respond to criticism.")

However, when pressed about allegations from Michael O'Neill in Jaroff's article, Edward waffled:

KING: "He quotes a Michael O'Neill, who attended one of your shows, and writes that O'Neill claims that his encounter on the show was edited and gave a false impression. Clips of him nodding 'yes' spliced into the videotape about statements [to] which he remembers disagreeing. Is O'Neill wrong?"

Paul Kurtz appears on *Larry King Live* opposite modern-day mediums.

EDWARD: "You know, I have to say that I would believe so, because I don't believe that they'd edit the show in that capacity. And again, I think that this is subjective to somebody's experience. . . . I can't speak for, you know, Michael, I can only speak for myself."

When King asked how he would prove his abilities, Edward replied, "You know, I think that to prove it, is a personal thing. It is like saying, prove God. If you have a belief system and you have faith, then there is nothing really more than that." Throughout the night, Edward, Browne, and Van Praagh insisted that any proof of mediumship was a matter of personal experience and preference, above the merely mortal realm of critical, scientific investigation.

In the next segment, King asked Jaroff whether he thought John Edward and others are frauds. "I think they're very good at what they do," replied Jaroff, "but what they do is baloney"—namely cold reading. Browne bristled at the remarks. "I don't think he's done his homework very well," snapped Browne, alleging that she has "saved baby's lives," "found people that were dead," and "solved crimes." Later in the program, when Browne again rattled off a resume of paranormal achievements—"finding bodies, and World Trade Center with Ted Gunderson and all that"—Kurtz retorted: "You throw out these wild claims that you've done this, have done that; they don't hold up under scrutiny."

Kurtz blasted mediums on intellectual and moral grounds: "Well, I think the claims are preposterous. . . . If someone makes a claim, an extraordinary claim, then we ask for evidence of the facts. And there are no facts to support this. What we're faced with are psychic sharps, like card sharps: sleight of hand, sleight of mind. They're using methods of deception to confuse poor people who have suffered death and are bereaved and I think this is not only false, but also immoral."

Later in the show John Edward played his wild card for scientific respectability, citing his participation in Gary Schwartz' study, conducted at the Human Energy Systems Laboratory at the University of Arizona, as documented scientific evidence of his powers. "Gary Schwartz believes in the tooth fairy," Jaroff blasted back, "He believes in UFOs. He believes in levitation."

Rabbi Boteach, despite being a credulous friend and supporter of Uri Geller, planted his feet firmly on the side of the skeptics when asked about his belief in mediumship: "Well, aren't you a bit surprised that the only message that the

dead seem to be able to give to us is [that] someone had a nickname 'Miss Piggy' and they can only tell us that, you know, I had a heart condition? For goodness sake, if that's the case then—no pun intended—to *hell* with them. . . . I mean, I would think that if someone is up there in the cosmos unrestrained by the constraints of the body, they could tell us about the great secrets of existence, where is God, and how can we better human life? . . . Instead they're telling us things like 'I choked on a chicken bone and I'm here to tell you that I don't hold you accountable for serving me that soup.'"

A former chief hostage negotiator for the FBI, Clint Van Zandt, described himself as open to the possibility of psychic abilities but noted that psychic practices were clearly irrational: "One of the first things a psychic asks a law enforcement officer to do is take your reason and logic and set it aside." When asked by Larry King whether he had ever found a psychic crucial to the solution of a crime, Van Zandt responded: "I've seen law enforcement try a lot of times. When I've seen them participate in the solution of a crime, my experience and the experience of my colleagues is that it's usually been some type of vague information, like a kidnap victim was kidnapped somewhere up along the Great Lakes and we've been told, 'You'll find the victim buried near a body of water.' Well, we understand the Great Lakes are a body of water. . . . I know there are people who will say, 'Well, we've been a consultant to the FBI.' But as far as seeing a case solved or a kidnap victim recovered—either dead or alive—based solely on the information of a psychic, no."

Toward the end of his show, Larry King set aside time for Browne, Edward, and Van Praagh to perform readings and have them analyzed by the skeptics. Sylvia Browne did a reading for one caller from Santa Fe, New Mexico, looking for a family history for her parents. Closing her eyes and focusing on the spiritual realm, she fastened onto the name "Burgess . . . in and around Memphis."

"I don't know if this is funny or sad," Kurtz commented. "She's engaged in guesswork. . . . The scientific community has been investigating these claims for a century and a half. It can find no hard evidence that people can communicate with the dead, no hard evidence that psychics can help detectives."

If the denizens of the spirit realm had any chance to prove their existence to skeptics in one fell swoop, it would have been on *Larry King Live*. Alas, they were content to let James Van Praagh choke on national TV.

A caller from Williston, Vermont, looked to Van Praagh to find out more about a brother-in-law who had "passed." Van Praagh responded with vague intuitions about a throat or breathing problem, family separations, someone he couldn't trust, a tattoo, and a baby. Despite a string of generalities applicable to many American males, Van Praagh came up empty handed:

KING: Ma'am, is any of that clear to you?

CALLER: No, I have to say it really isn't. . . .

KING: Does that mean, James, you missed on this one?

By the end of the evening, Browne, Edward and Van Praagh were increasingly irritable. Faced with skepticism, Van Praagh was reduced to aspersions of the motives of Kurtz, Jaroff, and CSICOP:

VAN PRAAGH: "I just want to say that it's interesting that these people here are in the business to destroy and destruct, while we are here to heal people and to help people grow. And these people, you have to look very carefully at what these people, their jobs, are. They are here to destroy."

KING: "Well the Rabbi isn't here to destroy. The writer isn't. Why are they here? They're [here] to investigate or be skeptics. I mean, that's . . ."

PRAAGH: "OK, let's hear the skeptics then, 'CSICOPs,' whatever. They're just here to destroy people. They're not here to encourage people, to enlighten people. They're here to destroy people."

A full transcript of the March 6, 2001, *Larry King Live* is archived on the CNN.com Web site at www.cnn.com/TRANSCRIPTS/lkl.html.

Kevin Christopher is Public Relations Director at CSICOP.

Evolution Returns to Kansas: Board Supports Science Standards

To the relief of scientists and science educators both locally and nationwide, evolution has returned to Kansas. In a widely watched vote on Valentine's Day, February 14, evolution was restored as a central theory to Kansas school standards.

The newly constituted State Board of Education voted 7 to 3 to approve the new science standards. The new standards include questions on evolution, which will now be considered one of the unifying concepts of the state's science curriculum. References to the great age of Earth and to the Big Bang theory of the creation of the universe were also restored.

The new standards are based on scientific theories accepted by the majority of scientists around the world. They draw on documents from the National Academy of Sciences, the American Association for the Advancement of Science, and the National Science Teachers Association. The three organizations issued a joint statement praising the new board's actions.

"These standards can and should serve as a model for other states that are considering revising their own standards," the statement said.

The vote reverses an August 1999 action of the Board on a 6 to 4 vote that had stripped evolution from its accepted place at the center of biological studies and created a furor that embarrassed Kansas educators and politicians and rippled throughout the nation. Governor Bill Graves had called the Board's 1999 action "terrible, tragic, embarrassing" (SI

November/December 1999).

That vote aroused the state's scientific community and others concerned about creationist interventions in educational standards for science courses. New candidates, with an invigorated *pro-science movement in Kansas* behind them, actively campaigned for restoration of evolution content. On August 1, 2000, two of the six members who had voted for the watered-down 1999 standards were rejected in the Republican primaries. A third member resigned and moved out of the state. Sue Gamble, a moderate who ran on a pro-science education plank, defeated Board chairwoman Linda Holloway, who had supported the creationist-influenced standards (SI, November/December 2000).

That set the stage for new standards restoring evolution, the Big Bang, and Earth's age to science curricula. The board discussed the standards for thirty minutes. A pro-creationist revision amendment was defeated. Then, with eight television cameras watching, including one from CNN, the board voted 7 to 3 for the new standards. After the positive vote, some people in the audience applauded.

"I believe now that we have science standards that the rest of the world could look to," said board member Carol Rupee, who voted for them.

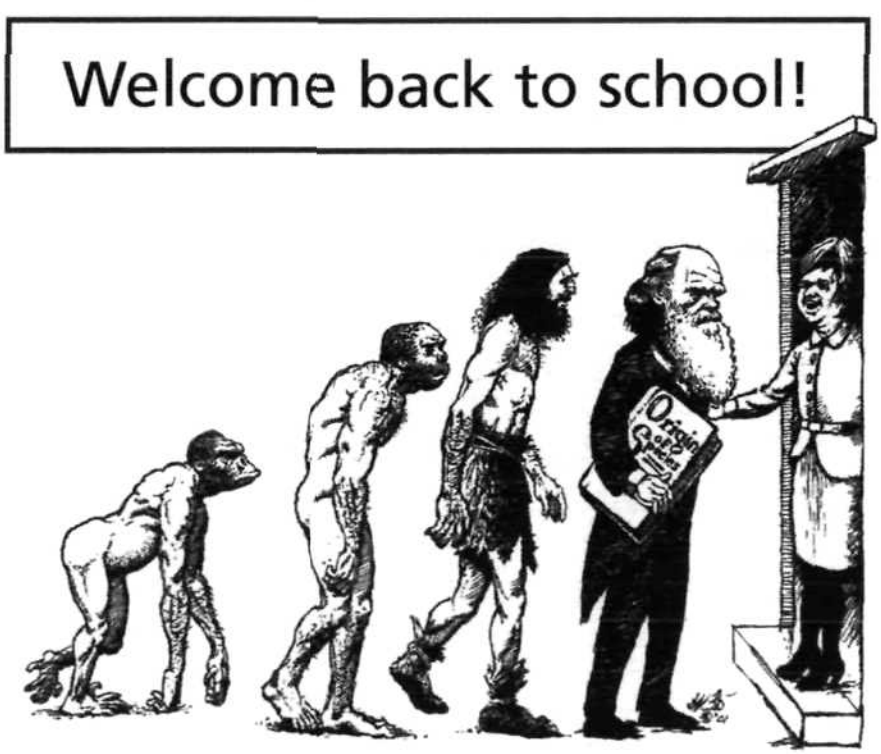
"*I'm really gratified that this chapter* is over," said John Stager, a Kansas State University professor and co-chairman of the 27-member committee of science educators who wrote the new standards. But he cautioned that the fight is not over.

John Calvert, managing director of the Intelligent Design Network, which proposes that life arose not through natural processes but through design, expressed disappointment in the vote. He said his group plans to push intelligent design to school boards across the country.

Said Shawnee, Kansas, businessman Dave Raffel, an evolution supporter: "This is one step down a long road that there doesn't seem to be any end to."

—Kendrick Frazier

Kendrick Frazier is Editor of the SKEPTICAL INQUIRER.



Urban Legend Makes International News

In late 2000, a horrifying news story came out of Russia: A grandmother was arrested for allegedly trying to sell her five-year-old grandson Andrei. Police in Ryazan, south of Moscow, said that the grandmother told the boy he was going to Disneyland. With the help of the boy's uncle, little Andrei was handed over to a man in exchange for $90,000.

But the story is more than just a tragic tale of a child sold into slavery or prostitution: according to the uncle and police, Andrei was sold to a man who would then take him to "the West," where he would be killed and his kidneys and other organs would be removed and sold. That's the story, anyway.

Several news organizations carried some version of the article, including the *Times* of India, the Associated Press, and Cable News Network (CNN). The story first appeared October 28, 2000, in the Associated Press, and was published exactly a month later by CNN. The CNN story was the most complete of the lot, with photos of a young boy and a woman in dark glasses and a hat, identified as Andrei's grandmother. The grandmother claimed that she was simply putting the orphaned boy up for adoption.

In the CNN.com version (available at www.cnn.com/2000/world/europe/11/28/russia.children), a short video clip accompanies the story. The piece, narrated by correspondent Steve Harrigan, identifies the uncle as Sergei Tkachov and a police spokesman as Dmitri Korneyev. It also includes what is claimed to be undercover surveillance videotape, though much of the footage looks suspiciously staged.

There are several reasons why this story is suspect. First, in the print versions, the principals are identified only by their first names. Other than the boy "Andrei" and his grandmother "Nina," no one else is identified. Quotes are unattributed, with phraseology such as "a police detective said . . ." and "police

said." Of course, "police" don't say anything; if a certain police officer says something, then he or she should usually be identified. This sort of writing helps obscure the sources, thus making follow-up verification difficult.

The story falters on its own logic. A five-year-old's organs, specifically the parts the article says he was sold for—the kidneys, heart, or lungs—would likely be unusable. No adult could benefit from a five-year-old's organs. They would be much too small and underdeveloped to simply insert into a grown adult. And it stretches credulity even further to posit that there is one or more five-year-old children in American or European hospitals awaiting stolen hearts, eyes, kidneys, or lungs.

I wrote about this urban legend in a previous issue ("Bitter Harvest: The Organ-snatching Urban Legends," SI 23(3) May/June 1999), and the reasons to be suspicious. It's important to realize that organs can't simply be pulled out of one person and put into another; transplants can't be done in someone's basement. Sophisticated medical equipment must be used, and donors and recipients must be carefully matched. Blood and tissue typing and histocompatibility tests must be done in advance. Well-paid medical staff, both here and abroad, are unlikely to risk their careers and reputations performing such illegal and unethical procedures.

Urban legends, presumed by some to be primarily a Western phenomenon, are in fact global. The film *Mute Witness*, whose topic was the urban legend of the snuff film, for example, was set (and filmed) in Russia.

Another oddity about the case is that while the grandmother and uncle are photographed, (partially) identified, and arrested, no mention at all is made of those allegedly *buying* the organs. While the grandmother could get three to ten years in jail, the story is curiously silent about the person(s) she "sold" Andrei to. Presumably, they would be the larger threat.

There can be a seamy side to the transfer of children. That children are bought and sold in economically depressed areas is firmly established (usually they are used for child labor or prostitution). In addition, there is also unquestionably a global effort to provide children and babies for adoption—usually legally, but sometimes not. There is, however, a giant leap of inference between saying that the child was sold (or illegally adopted) and saying that he was sold to be subsequently killed for his organs. Some police officials undoubtedly believe in the commerce of stolen childrens organs, and in many places the urban legend is wholly believed.

Ms. Ofelia Calcetas-Santos, of the Office of the United Nations High Commissioner for Human Rights, isn't convinced that the trade in children's organs exists, calling the stories "rumors." According to the 1999 *Report of the Special Rapporteur on the Sale of Children, Child Prostitution and Child Pornography*, "Rumors persist that there exists an illegal trade in human organs, and the Special Rapporteur has received allegations that street children in [Latin America] and the Russian Federation are being killed so that their organs can be used in transplant operations. Such allegations have recurred repeatedly for over twenty years, but to the best of the Special Rapporteur's knowledge, nobody has been convicted of being connected with such an offense."

There are several scenarios under which this story may have occurred. First, the grandmother may have (as she claimed), been simply selling the child in an illegal but common adoption scheme, with no intention of selling the boy's organs. The fantastic and lurid details of the organ-snatching aspect were later added by the press. This interpretation is endorsed by Nancy Scheper-Hughes, professor of anthropology at the University of California at Berkeley and co-founder of Organswatch, a group fighting the inequitable distribution of organs. She was interviewed by the BBC, and writes that "My understanding is that the grandmother was willing to hand over her grandchild for a cash payment, but that it was a paid international adoption 'deal,' not for organs trafficking which was the surreal layer added on to a story that was sad enough as it was."

It is also possible that the story's sensational details were encouraged by Russian organized crime. A motive for inflating the story is provided by Viktor Vasilievich Luneev, a professor and chief scientific researcher at the prestigious Russian Academy of Sciences. In a report titled *Crime in the Twentieth Century: International Criminalogical Analysis* (available at www.american.edu/transcrime/work), Luneev notes that in recent years it has become fashionable in Russia to sensationalize crime stories, in particular ones with a possible connection to organized crime. In fact, one of the tactics of Russian organized crime is "Dissemination of frightening rumors as to their power, which brings criminal organizations more benefit than harm, since it demoralizes witnesses, victims, journalists, and law enforcement organs and supports the criminal spirit of rank and file members who execute functions."

Steve Harrigan, of CNN's Moscow bureau (from whose television report the print version of the story was taken), has another take on the story. He believes that the grandmother did indeed believe she could get money for Andrei's organs (regardless of whether or not she actually could). He noted that local police showed reporters their videotape of the woman being tackled and arrested with money attempting to make the deal. The question is a deal for what? A deal for an illegal adoption or a deal ultimately for organ theft? And wouldn't the video look the same either way? After all, the distinction is one of intent.

Harrigan's take may be the correct one, but it leaves other questions unanswered, including why those allegedly trafficking in children's organs weren't named or arrested.

—Benjamin Radford

Benjamin Radford is Managing Editor of the SKEPTICAL INQUIRER.

Fox Special Questions Moon Landing But Not Its Own Credulities

Fox television aired a special on the alleged Moon landing hoax conspiracy on February 15, 2001. I had hoped the special might include a skeptical treatment, but all hopes were dashed as the program unfolded. They presented the arguments of the "true believers" without any significant skeptical rebuttal. The program claimed to "let the viewer decide for themselves" about whether there was a hoax or not, but failed to present a balanced program, instead giving the viewers a highly biased pro-hoax set of evidence on which to base their conclusions.

The "star" of the Fox special was Moon landing "skeptic" Bill Kaysing, whose credentials include seven years in the technical publications department for the Rocketdyne research department in Simi Hills and who claims to have had a top-secret clearance at that time. Other "experts" who supported the hoax included the producer of the movie *Capricorn One*, Paul Lazarus; author and scientist Ralph Rene; photographic expert David Percy; Jan Lundberg, an employee of the Hasselblad company; Boris Valentinovich Volinov, a Russian cosmonaut; the son and wife of astronaut Gus Grissom; and astronaut candidate Brian O'Leary, whose comments may well have been taken out of context in order to appear to support the claims of a Moon landing hoax. On the anti-hoax side were only three experts whose on-air commentary did little to actually rebut the hoax proponents arguments.

During the hour-long special, Fox trotted out most of the tried and true arguments used by the hoax believers. This author and others have pointed out the flaws in all of these arguments prior to the production of the program on Web pages and Internet usenet groups, but Fox made little attempt to address the arguments. Here are a few of the arguments presented by the hoax proponents.

1. *No stars are visible in the sky.* The program claimed that since there is no atmosphere, stars should be visible in the black sky of the lunar surface photographs, yet none are visible. Despite having two photographic experts in their number, the pro-hoax proponents are unable to recognize the reason the stars are not seen. The photographic exposures are set to record a brightly-lit daylight scene. These exposures are nearly identical with the exposures expected on Earth and are too short to correctly expose the faint images of stars.

2. *The flags are seen to wave as if in a breeze.* The Fox special showed several instances of the American flag flapping around as if it were blowing in a wind, despite the lunar vacuum. However, in every instance, an astronaut can be seen actively adjusting the flag or having just finished adjusting the flag. After the motion damps out, the flag comes to rest, just as it should. In one telling scene, an astronaut is actually twisting the flagpole as the viewer is expected not to notice.

3. *Identical backgrounds are seen with differing foreground objects.* The Fox special showed two photographs obtained during the Apollo 15 flight. One showed the Lunar Module sitting in front of a background of mountains. The second photograph shows the same background mountains, but with a boulder-filled crater in the foreground. This apparent anomaly shows just how uncritical the Fox special was. The mountains in question are several miles behind the Lunar Module. Two photographs taken even a few hundred feet apart can show the same mountains, nearly unchanged, especially at the level of examination shown on the program, with two rather different foregrounds.

4. *You can see details in the shadows.* The hoax proponents claim that without an atmosphere, there should be no details visible in the shadows, since there is only one light source—the Sun. However, once again they overlook the obvious explanation, namely that light scatters off of objects *including the lunar surface itself*, as well as astronauts and their equipment and fills the shadows with light. The scattered light from the surface is an effective source of shadow illumination. Any real photographic expert should be familiar with the use of reflectors to help fill a shadow, yet the two such "experts" on the Fox special fail to mention this important detail.

5. *Comparison with* Capricorn One. At one point, the producer of *Capricorn One* compares the budget of his film to the total budget of the Apollo program and suggests that the relative budgets would allow the nearly perfect fakery of the Apollo missions. The narrator goes on to compare the events in the Moon landing films with those from the movie, suggesting even that perhaps the Moon landing copied the movie. The narrator failed to point out that the film was released in 1977, some eight years *after* the first Moon landing.

Some might wonder what the harm is in credulous programs like this one. But given the high levels of scientific illiteracy in America today, surely we don't need programs such as this confusing the public with bad science.

Furthermore, their investigative approach is biased and uncritical, looking only for the evidence that supports their claims, all the while claiming to be skeptical and scientific. A one-sided presentation such as this leads the viewers to only one conclusion—that there was in fact a Moon landing hoax and a conspiracy to cover it up.

Unfortunately, as time goes by, fewer and fewer of those who were involved in the Apollo program and those who watched in amazement as twelve men walked on the Moon are around to provide witness to those events. The theories of the hoax "true believers" defile the achievements of Apollo and ignore physics and logic. All of the evidence and the accounts point to only one conclusion: Apollo landed twelve men on the Moon. For more in depth commentary on the Fox program, visit my hoax debunking Web pages at pirlwww.lpl.

Fund for the Future

CSICOP AT THE CENTER FOR INQUIRY

CFI-International
Amherst, N.Y.

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.

The Ten-Year Plan

CFI-Midwest
Kansas City, Mo.

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

How Can You Help?

CFI-West
Los Angeles, Ca.

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.

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.

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

CSICOP
at the Center for Inquiry
P.O. Box 703
Amherst, NY 14226-0703
(716) 636-1425 ext. 311
Fax (716) 636-1733

Council for Media Integrity

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

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.

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.

arizona.edu/~jscotti/NOT.faked and pirlwww.lpl.arizona.edu/~scotti/NOT.faked/FOX.html.

—*James V. Scotti*

James V. Scotti is an astronomer at the Lunar & Planetary Laboratory at the University of Arizona in Tucson.

Richard Wiseman Tries to Tune into Ever-Elusive ESP

On December 7, 2000, the "Museum of the Unknown" in London, England, hosted "The World's Largest ESP Experiment," the brainchild of Richard Wiseman. The museum was the venue for a day-long series of ten half-hour ESP trials. Members of the public were asked to psychically transmit a series of images they viewed on a projection screen to a "receiver" who sat in the "ganzfeld state" (a mode of sensory isolation) 200 yards away in a nearby building, 19 stories above street level.

Wiseman was leading what CNN.com Europe described as "a sort of brain-wave blitzkrieg," getting crowds of "senders" cooperate as psychic messengers. "By boosting the signal, by having lots of senders," Wiseman told a British ITN television reporter, "you'd expect that maybe you can achieve spectacular results and that's what we're trying to find out today."

In another experiment that day, while thirty people sat in a room concentrating on the projected images of gophers and other assorted objects, a sequestered receiver relaxes in the "ganzfeld" state: she reclines with ping-pong ball hemispheres taped to her eyes, listening to white noise and bathing in soft, red light. Her goal is to empty her mind for ten minutes, then focus on any psychic impressions that might be emanating from the people back at the room in the museum.

If the battery of trials had yielded six or more hits out of ten, Wiseman would conclude that the results hint at some phenomenon other than chance. Speaking to a reporter from the ITN Network in the United Kingdom, Wiseman described the goals of the tests he had set up:

"It's very difficult to tell ESP from chance. I mean, we could do a hundred trials. They could all be hits. It could still be chance. But what we're looking at is saying, 'Well look, if it goes to 100 to one, if it goes to 200 to one, that doesn't feel so much like chance, that feels like something else going on.' And that's really how we're measuring things."

The results of the experiment—two hits out of ten—failed to find any evidence of a psychic message transmission.

—*Kevin Christopher*

Faster than Light? Well, Yes and No

Perhaps you saw the headline from *The Sunday Times* (London) on June 4, 2000: "Eureka! Scientists break speed of light." Or perhaps you caught mention on radio or television about research by Dr. Lijun Wang (of the NEC Research Institute in New Jersey) involving violations of one of the most important rules of physics, namely that nothing can exceed the speed of light. Several other "superluminal" experiments have made the news this last year. What you won't always hear is that the experiments don't disprove Einstein, and that causality has not been violated.

Salon.com carried an excellent analysis by Chris Colin (8/3/2000), who got to the bottom of the Wang story. After the initial excitement and confusion, it had turned out that, "Far from challenging fundamental rules of nature, the team developed a method of manipulating the wavelengths of a beam of light, thereby altering the way it arrives at its destination. Because short wavelengths become longer and long ones become shorter, the natural fanning outward that marks a light pulse is eliminated; consequently the shape of the pulse at its destination appears the same as at its origin. This effect, called anomalous dispersion, had never been produced in a transparent medium [until Wang]. . . . The light didn't speed up, but rather the peak of its pulse shifted, thereby changing its intensity."

In light of what the Wang experiment did—and didn't—show, it's amusing to note the reaction of physicist Russ Humphreys, a young-Earth creationist from New Mexico. Humphreys wrote on the new "speed of light" experiments for the Answers in Genesis web site (www.answersingenesis.org), focusing on Wang's article in the journal *Nature* (Vol. 406, pp. 277–279). Humphreys wrote "The most puzzling thing to me is how the authors appear to deny the obvious implications of their data. They imply that their results do not suggest that information could be transmitted faster than the speed of light in vacuum, and yet the nearly-raw data in their figure 4 says [*sic*] just the opposite." Humphreys goes on to say "The newspapers actually got that point right. This raises the possibility of transmitting information 'backwards' in time. That would be astonishing!" In other words, creation physicist Humphreys, like the *Times*, completely misunderstood the Wang research. Causality violation wouldn't bother Humphreys anyway; he also writes ". . . for millennia the Bible has been transmitting detailed information to us about the future. I haven't noticed the world collapsing into non-causal chaos quite yet!"

Recently, New Mexicans for Science and Reason (NMSR) heard Dr. Mohammed Mojahedi, of the University of New Mexico Physics Department, speaking on his "superluminal" research. Mojahedi works at the University of New Mexico's Center for High Tech Materials (CHTM), and his group's fascinating experiment was reported in the October 2000 issue of *Physical Review E*. In Mojahedi's work, pulses have been measured as traveling faster than the speed of light in vacuum, some 300 million meters per second.

In Mojahedi's experiment, a beam of

microwaves was split into two, and the path lengths for the two beams calibrated. Then, a special array of plastic window panes was inserted into one of the beams. One might expect that the array of windows might slow down the pulse, delaying the arrival of that beam. But just the opposite happened. Mojahedi's group consistently measured the window-path beam's main pulse as arriving half of a billionth of a second before the pulse from the vacuum-path beam; for the small distances involved on the lab table, this amounted to a speed of 2.38 times the speed of light!

The effect is due to quantum tunneling effects in the window materials, dielectric photonic crystals. Mojahedi exploited a curious property called Evanescent Mode Propagation to achieve his surprising results.

But how surprising were the results? Was Einstein causality violated? Mojahedi said "No." The faster-than-light-speed ("superluminal") propagation was observed only for the main part of the pulse signal. This is the large-amplitude part of the pulse that is easy to measure. It's much harder to measure the very beginning of the signal—the "forerunner" or "precursor"—because those signals have very small amplitudes. Yet the forerunner signals are the ones that obey the cosmic speed limit of the universe, the speed of light.

Mojahedi used an analogy involving race cars. The forerunner signals correspond to the sharp front edge of the race cars, while the main section of the race cars, containing the driver, correspond to the main pulse of the signals. In both the "normal" and "superluminal" paths, the forerunner signals arrive at the same time—both travel at the speed of light, no faster. (See points labeled A and A^1 on the diagrams.) However, the main pulse is accelerated in the photonic crystals, with the result that it arrives earlier in the superluminal path (going through the special windows) than through the vacuum path. (See points labeled B and B^1 on the diagrams.)

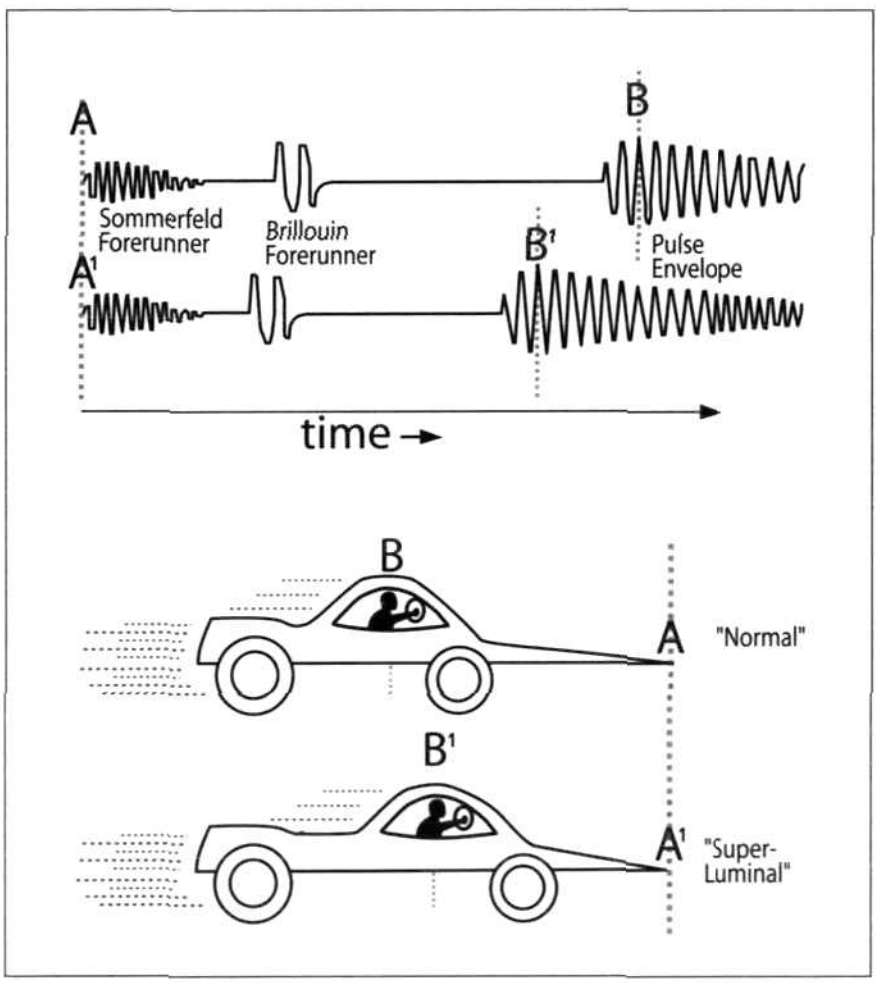
The figure shows signals like the ones Mojahedi's group measured. The Sommerfeld forerunner signals arrive at the same time for both the normal path (A, top) and "superluminal" path (A^1, bottom). The Brillouin forerunners arrive next, with the superluminal path's signal winning that race by a small amount. The main envelope of the superluminal pulse arrives earlier (B^1) than the envelope for the normal pulse (B). And so the velocity of the forerunner pulse does not exceed that of light, but the "group velocity" (for the main pulse envelope) does.

Mojahedi described how his work challenges some of the earlier thinking in this field, such as comments by Borne and Wolfe, and Brillouin, that superluminal group velocities had no physical significance or meaning. Does this work suggest that faster-than-light communications might be possible? Unfortunately, no. While the superluminal pulse (B^1) might arrive before its vacuum counterpart (B), it will never precede the arrival of its precursor (A^1). That would be like the driver of the race car reaching a point before the leading edge of the car does. However, the work may hold promise for speeding up detection of pulses in applications such as computing.

With other interesting experiments being conducted, such as slowing light down to a crawl inside a special medium, the speed of light continues to be an entertaining subject. Rumors of the demise of Einstein and causality are still a bit premature.

—David Thomas

Dave Thomas, a physicist, is president of the New Mexicans for Science and Reason and a SKEPTICAL INQUIRER consulting editor. □



Gobbledygook and Charm: Still the Right Formula for Selling Snake Oil

MELISSA POLLAK

A scientist, not an economist, should be writing this article. I say this because I didn't understand a lot of what was said at a recent seminar on alternative medicine sponsored by the Washington Science Policy Alliance. Although I have a master's degree, I've had no medical training, never taken a course in physics, and high school chemistry was—well, let's say, a long time ago. So I was pretty befuddled that afternoon, especially during one speaker's presentation. He might as well have been speaking a foreign language; it wouldn't have made any difference. It all sounded like gobbledygook to me.

Later, at the reception, I met a young woman who works for the American Physical Society. In confessing my inability to understand what the one speaker had said, I repeated my "gobbledygook" description. But rather than enlightening me, as I had expected her to do, she declared: "It *was* gobbledygook! I have a Ph.D. in quantum physics, so I should know!"

Melissa Pollak is a senior analyst at the National Science Foundation where she's currently in charge of NSF's Survey of Public Attitudes Toward and Understanding of Science and Technology and an author of the National Science Board report, Science & Engineering Indicators. *The opinions, findings, and conclusions expressed in this article are those of the author and do not necessarily reflect the views of the National Science Foundation.*

Actually, the most lasting impression I have of the session was not what the speakers said, but the reaction of the audience. I was astounded at how little the speakers were challenged during the question and answer period, especially since the seminar was held in the auditorium of the American Association for the Advancement of Science headquarters in Washington, D.C.

In attendance were well-educated people, including many scientists, and it seemed that most of them were actually buying what the speakers were saying.

At one point, a woman stood up not to ask a question but to deliver her own message. Facing the audience, she described herself as a physician who had practiced medicine for twenty years. Then, with fervency normally reserved for the pulpit, she proceeded to berate her colleagues in the medical profession for unnecessarily prolonging the pain of their patients by failing to prescribe alternative therapies for their ailments.

Also in the audience were a number of congressional staffers and a group of individuals whose nametags read "Friends of Health." In fact, the names of four of the five speakers on the program appear on a brochure put out by this new organization and made available at the seminar. All were listed as members of a "Science Advisory Committee." The first page of the pamphlet contains the following quote: "Combining the wisdom of the ages with the inspiration of modern science for new paths to health."

The mover and shaker behind "Friends of Health" appears to be Rustum Roy, the well-known scientist—and highly excitable first speaker at the seminar. No one could accuse Professor Roy of lacking enthusiasm for the subject. Partly in order to beat the clock (each speaker was allotted only fifteen minutes), words spilled out of his mouth so fast that I had trouble keeping up with what he was saying. According to my notes, these are some of the points he made:

- The U.S. ranks twelfth out of thirteen countries in terms of the quality of health of its citizens. Therefore, health care is not reaching as many people as it should.
- Millions of people are turning to alternative therapies, even though most of these treatments are not being reimbursed by health care plans. These people must know something. Millions of people cannot be wrong!
- Friends of Health is not your typical alternative medicine organization because it is "very data oriented." There is an enormous wealth of scientific data supporting alternative therapies. These data have been ignored, but people should look at them. The study of science is full of examples in which unconventional theories have been repeatedly rejected by a mainstream scientific

community only to eventually achieve acceptance at some later point in time.

• We now have evidence that these therapies work—"from machines," such as Magnetic Resonance Imaging (MRI). William Tiller (also on the Friends of Health Science Advisory Committee) and others have conducted detailed physics experiments, and we now have "hundreds of data points." Not only can MRI prove the effectiveness of acupuncture, but MRI can also tell the "yin" people from the "yang" people.

Hans-Peter Duerr, the next speaker, spoke gobbledygook. In addition, he used a prop, a fancy pendulum, to illustrate whatever it was he was trying to say. I did manage to jot down one quote: "Our rational thinking has natural limitations." During the reception, the young woman from the American Physical Society informed me that Professor Duerr was a world-famous physicist, and that she and other scientists were rather puzzled by his involvement in alternative medicine. The fact that Duerr has a reputation as a brilliant scientist didn't surprise me. Over the years, I've had the opportunity to observe a lot of highly intelligent people who have made many notable contributions in their fields of expertise. At the same time, I've discovered that sometimes there are chinks in those brilliant minds—blind spots that defy explanation. Duerr's uncritical enthusiasm for alternative medicine must fall into that category.

If anyone seemed out of place on the panel, it was the third speaker, Henry Heimlich. By far the most famous of the quartet, he's known not just in the scientific community, but throughout the world. (Has anyone on this planet not heard of the "Heimlich maneuver"?) So what was Dr. Heimlich doing on the panel? Well, like the others, he's got a problem with the medical profession. However, unlike the others, his complaint seems to have merit. Apparently, until recently, the medical profession refused to recognize the superiority of the Heimlich maneuver over mouth-to-mouth resuscitation in emergency situations other than choking. In addition to lobbing a little undeserved criticism at Heimlich's maneuver (it may cause vomiting), the medical profession has been slow to acknowledge the ineffectiveness of mouth-to-mouth resuscitation in saving heart attack and drowning victims. Recent research has just brought this fact to light. For drowning victims in particular, there now seems to be a sound body of evidence that mouth-to-mouth may do more harm than good, and that the Heimlich maneuver should be used instead. Apparently, this conflict with some intransigent colleagues was enough to send Dr. Heimlich into the very receptive arms of Friends of Health.

Dr. Wayne Jonas, former Director of the National Institutes of Health Center of Alternative and Complementary Medicine, was the last scientist on the panel. His presentation was mostly visual with slides showcasing lots of statistics extolling the popularity of alternative medicine. Among his numbers were those documenting how few physicians recommend alternative therapies—and that the more popular the therapy among the general public (e.g., herbal remedies), the less likely it was to be prescribed.

He cautioned the audience that the appropriate term for the topic was "complementary" instead of alternative medicine, because most people—83 percent—who use alternative therapies also seek advice from their primary care physicians. Most of these patients (72 percent), however, fail to tell their doctors about their use of alternative therapies. According to Dr. Jonas, this communication gap is a serious problem with public policy implications. Although Dr. Jonas's presentation was certainly informative, it didn't provide a clue about the secret of his success as an advocate for alternative medicine. I didn't gain that insight until I had a chance to chat with him during the reception. More about that later.

The last speaker was Addeane Caelleigh. She was introduced not as a scientist but as a social historian and the editor of the journal *Academic Medicine*. According to Caelleigh, the popularity of alternative medicine "is driven by medicine as a social activity." In addition to describing this justification for the high level of interest in alternative medicine, she also brought up one point that none of the other speakers had mentioned: the high level of scientific illiteracy among the general public. This is ironic in light of the fact that, according to Dr. Roy, the best proof we have that alternative therapies work is the many millions of people who are drawn to them.

A lot of highly intelligent people have made many notable contributions in their fields of expertise. At the same time, I've discovered that sometimes there are chinks in those brilliant minds—blind spots that defy explanation.

At the reception, I had the opportunity to chat with a number of people, most of whom were strong advocates of alternative medicine, including two women who work for science-related associations. After listening to them describe how they had been helped by all sorts of alternative therapies, I couldn't resist trying to make a little joke by commenting that alternative medicine for pets has recently gained popularity. Much to my surprise, my little remark was treated with the utmost in seriousness. One of the women was only too happy to tell me that her dog's arthritis had been completely cured by an alternative practitioner.

GOBBLEDYGOOK AND CHARM

Continued on page 19

White House Commission on Complementary and Alternative Medicine Is Biased

PAUL KURTZ

The White House Commission on Complementary and Alternative Medicine policy was created by an executive order of President Clinton on March 7, 2000. This was in response to enormous political lobbying, especially by Senators Orrin Hatch and Tom Harkin. The purpose of the Commission is to develop a set of legislative and administrative policy recommendations that will "maximize the delivery of alternative medicine to the public."

The former president was to appoint nineteen commissioners. It is the view of the editors of the *Scientific Review of Alternative Medicine* (the only peer-reviewed skeptical journal in the field) that virtually all of the members of the Commission selected thus far are in favor of alternative medicine, and that the Commission is not fairly represented by skeptical medical scientists. Incidentally, it is unclear at this time as to what the new Bush administration will do with the Commission.

The Commission has been holding open public forums throughout the country. I was invited by the Commission to present testimony before it, and I did so on behalf of CSICOP on December 4, 2000, in Washington, D.C. The following are my written responses to questions provided to me beforehand.

1) Should Complementary Alternative Medicine (CAM) be integrated with conventional medicine and why or why not?

I do not think that it should be integrated. I deplore the efforts to do so. The term "conventional medicine" is a misnomer. What is labeled as "conventional" is modern scientific or evidence-based medicine. Many or most CAM therapies on the other hand are conventional and ancient, such as traditional Chinese medicine, qigong, or spiritual importations from India.

Scientific medicine is a relatively recent development in human history, especially since the nineteenth century, when increased knowledge of physiology and human anatomy was refined. There have been a number of brilliant researchers who have contributed to our understanding, such as Claude Bernard, Louis Pasteur, Robert Koch and Joseph Lister. Theories about the nature and transmission of infectious diseases—such as diphtheria, tuberculosis, malaria, typhoid, tetanus, polio—and the development of vaccines had important roles in immunization. Likewise important were the advances in epidemiology, public health, and sanitation. In the twentieth century endocrinology advanced—with the discovery of insulin, cortisone, and sex hormones. In the field of nutrition, researchers discovered the role of vitamins. There have been significant new diagnostic tools, such as X-ray imagery, CAT scans, mammography, and sonograms, to mention only a few. The great strides in surgery have been impressive, including cardiology, neurosurgery, and organ transplantation. The discovery of antibiotics has made enormous contributions to the cure of infectious disease. We should add to this the discoveries of DNA, biogenetic research, gene therapy, and other innovations on the frontiers of research. All of these achievements have led to the reduction of infant mortality and the extension of life spans. Part of this process was the development, beginning in 1904, of rigorous standards of education in medical schools. Thus we see the remarkable effectiveness of modern scientific medicine—all for the benefit of mankind.

The key factor in evidence-based medicine is that any new diagnostic techniques and therapies be submitted to rigorous, double-blind clinical tests. Unfortunately, CAM therapies, in our view, have not been adequately tested. Too often the claims of their validity have been anecdotal or highly subjective, uncorroborated reports by practitioners and/or their patients, some of these based upon the placebo effect.

Surely, we cannot lump all CAM therapies together and make a blanket indictment. Each has to be examined objectively and impartially. Scientific medicine admits that fallibility and skepticism are parts of its process of inquiry. On the other hand, we should insist that the public be safeguarded against unproven cures, untested therapies, and quackery by practitioners and manufacturers out to make a profit.

2) Should there be access to and delivery of CAM products and practices? If so, why? If not, why not?

I do not think that there should be universal access and delivery of CAM products and nostrums. This will tend to weaken what is one of the finest health care systems in the world. CAM could undermine the line between genuine science and pseudoscience. Each claim to validity must be tested by impartial, neutral observers—not simply their advocates. If a therapy proves to be effective, then it becomes part of scientific medicine. It is vital, in our view, that this Commission represent not only proponents of CAM, but scientists and physicians who are skeptical of its claims.

3) If current CAM utilization trends continue, what consumer protection should be implemented?

CAM seems to be growing. I think the public should be protected. The government has an obligation to act against spurious or fraudulent claims. The free market—in selling adulterated goods and questionable services—needs to be monitored. The misuse of taxpayers funds needs to be safeguarded. The great issue is the health and welfare of the American public. Government sponsorship of questionable CAM therapies would be a disservice to the public interest.

4) What policy recommendations do you have for the Commission?

I would strongly urge as a first step the repeal of the 1994 Dietary Supplement Health and Education Act, which freed herbal medicines and dietary supplements from regulation by the FDA. Prescription drugs are required to be tested. There are no such safeguards for dietary supplements. There are now some 20,000 such supplements—including herbal and homeopathic remedies—on the market. Many of the manufacturers make false and misleading claims. Many have dangerous side effects. Some may have positive results. In any case, the packages should be properly labeled—there should be "truth in labeling." Those medications deemed to have possible noxious side effects by misuse should require a prescription.

Second, similar regulations should be enacted against other false claims—such as quack cancer cures, crash diets, Chelation therapy, iridology, therapeutic touch, and magnetic therapy. This is particularly important when patients avoid scientific medicine and substitute alternative therapies, believing that since they are offered by the health delivery system, they must be effective. There needs to be peer review, as in scientific medicine, not simply by the practitioners in a field, but by other objective and neutral scientific reviewers.

Paul Kurtz, Chairman, Committee for the Scientific Investigation of Claims of the Paranormal; Publisher, The Scientific Review of Alternative Medicine.

Primal Scream: A Persistent New Age Therapy

Alternative medicines and curious treatments for physical ills are flourishing as never before around the world. The same is true of alternative mental therapies. Every year it seems as if new and outlandish forms of psychiatry appear in books and articles, along with thousands of satisfied patients who provide glowing testimonials about how completely they have been "cured" by the new techniques.

In this column I focus on one of the once-popular New Age therapies, the so-called "primal scream" technique discovered and promoted by Dr. Arthur Janov, a California psychologist. Born in Los Angeles in 1924, Janov obtained his doctorate in psychology in 1967 from Claremont College, in Claremont, California. During the second world war he was a Navy signalman. In 1976 he divorced his first wife, Vivien France, who had helped pioneer his work. He later remarried.

Janov and Vivien founded the Primal Institute in Los Angeles in 1970, where some two dozen staffers then practiced primal therapy. Three years later he began publishing *The Journal of Primal Therapy* and the monthly *Primal Institute Newsletter.*

The public first became aware of the new therapy in 1970 when Janov published his first book, *The Primal Scream.* It became an instant best seller, and the therapy became something of a fad around the world, especially in California. A handsome Janov appeared on the Dick Cavett show. He was interviewed by *Vogue.* John Lennon, Yoko Ono, actor James Earl Jones, and other Hollywood bigwigs praised primal therapy. Sweden aired a long documentary about it.

The basis of primal therapy, which came to Janov like a revelation from on high, is easily capsuled. All neuroses, psychoses, and psychosomatic ills derive from repressed memories of childhood traumas, particularly the violent trauma of being born. This central role of the birth trauma goes back to Otto Rank, a psychotic Vienna psychoanalyst who broke with Freud. Rank traced all neuroses back to a painful birth. He even wrote a book titled *The Trauma of Birth* (English translation 1929), which he dedicated to Freud.

By a series of interrogations—the details of which Janov has kept secret for fear of their being used by untrained therapists—a patient is slowly regressed to childhood. Unconscious memories of incidents which he or she suffered as a very young child start to emerge along with memories of actual birth. When these memories are recovered the ills begin to disappear, though it may take many sessions and much time and money. Moreover, Janov claimed, one's aging process slows down—he once likened his therapy to the Fountain of Youth. Resistance to all diseases increases. In brief, the patient starts to lead a normal, healthy, happy life. Once healed, Janov asserts, a patient will never need therapy again.

The Primal Scream was followed by a spate of popular books with such titles as *The Primal Revolution*; *The Anatomy of Mental Illness*; *Primal Man*; *The New Consciousness* (written with Michael Holden, M.D., then Janov's medical director); *The Feeling Child*; *The New Primal Scream*; *Prisoners of Pain*; and *Imprints: The Lifelong Effects of Birth Experiences.* All these books are now out of print.

In 1972, when Simon and Schuster published *The Primal Revolution*, it was an alternative selection of several book clubs. A full page ad in *The New York Times Book Review* (November 19, 1972) included a list of ailments primal therapy—and only primal therapy—can cure or alleviate: alcoholism, homosexuality, drug addiction, psychoses, paranoia, depression, and manic-depression. In a similar ad for *The New Primal Scream*, in the same periodical (May,

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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.*

1991), the following ills, all helped or cured by the therapy, are added to the previous list: tension, stress, anxiety, sleep disorders, high blood pressure, cancer, sex difficulties, obsessions, phobias, ulcers, colitis, migraine, asthma, and arthritis.

Not only was Janov convinced that no other form of mental therapy works, but primal therapy must be administered only by workers trained at his institute. Later he speculated that perhaps someday families would learn the technique. This could result in a world with less injustice and no wars. "It would be," Janov is quoted in *Contemporary Authors* (Volume 116), "the only hope if mankind is to survive."

All mental ills, Janov is convinced, result from what he calls "primal pain," a suffering arising from repressed memories of childhood traumas. Illness is a "silent scream." When patients recover their lost memories of early traumas, especially the trauma of birth, they often writhe on the floor, sobbing, and screaming with rage at whatever was done to them or at the violence of their birth.

Such sessions are called "primals." The recovery process is called "primalizing." Primals take place in soundproof rooms with padded floors and walls to prevent patients from injuring themselves while writhing and screaming. The entire process is, of course, faster and cheaper than psychoanalysis, which can go on for years.

Janov was a pioneer practitioner of what later came to be called the "false memory syndrome." During the 1980s and 1990s hundreds of innocent parents and teachers were falsely accused of sexual molestation, frequently of school children. These fake memories were implanted in the patient's mind by well-meaning but self-deceived therapists. Thanks to the valiant efforts of Pamela Freyd, who started the False Memory Syndrome Foundation in 1992, the tide has slowly turned. Judges and attorneys have become aware of how easily such memories can be fabricated, with the happy result that many therapists and quack psychiatrists have lost costly lawsuits, and dozens of innocent adults had their convictions overturned after spending years in prison.

For details about this great psychiatric scandal you can consult the two chapters on it in my *Weird Water and Fuzzy Logic* (1996), or such excellent books as Mark Pendergrast's *Victims of Memory: Sex Abuse Accusations and Shattered Lives* (1995). The False Memory Foundation is at 1955 Locust Street, Philadelphia, PA 19103-5766.

There is not the slightest reliable evidence that any adult brain harbors repressed memories of birth.

Janov is not particularly concerned with memories of sexual abuse since any old kind of early childhood trauma will do. Prior to primalizing, patients spend a week in a hotel room without radio, television, or anything to read. They are not allowed to sleep the night before their first session. In his section on primal therapy Pendergrast quotes Janov as saying, "The isolation and sleeplessness are important techniques which often bring patients close to a Primal. Lack of sleep helps crumble defenses."

Of course there is not the slightest reliable evidence that any adult brain harbors repressed memories of birth. Nor, for that matter, any memories of the first one or two years of life, or of pre-birth memories of life inside the womb as Janov also believes—a belief he shares with L. Ron Hubbard, Stanislav Grof, and others.[1]

In a letter to the SKEPTICAL INQUIRER (Fall 1988) Janov canceled his subscription and asked for a refund. He was furious because in the magazine's Winter 1987–88 issue Barry Beyerstein, writing on "The Brain and Consciousness," had called primal scream therapy "suspect."

There have been several tragic spinoffs from primal therapy. In 1971 a Center for Feeling Therapy made its appearance in Los Angeles, founded by two defectors from Janov, Joseph Hart and Richard Corriere. Its techniques included ordering patients to strip and to endure beatings. The center closed in 1980 after losing many lawsuits. Later it was roundly pummeled in such books as *Therapy Gone Mad* by Carol Lynn Mithers (1994) and *Insane Therapy* (1998) by sociologist Marybeth Ayella.

An even uglier spinoff was the rise of "rebirthing therapy," a crazy New Age technique started in the 1970s by one Leonard Orr. The therapy consists of wrapping a patient in blankets to simulate the mother's womb, then pushing pillows onto the patient's face to arouse feelings of labor contractions.

An elderly born-again Christian, Orr lives in his birthplace, Walton, New York, where he runs a rebirthing training center and edits its newsletter. He has written some twenty books. They include *Rebirthing in the New Age* (1977) and *The Healing Power of Birth and Rebirth* (1994). His therapy is closely related to breathing exercises and what he calls the "power of fire." In a trip to India he met a number of yogis who claim to have lived more than 2,000 years. One of them, Yogi Babaji, Orr believes to be over 9,000 years old. You can read all about him in Orr's 1992 book *Babaji, The Angel of the Lord.* Somehow Orr manages to combine his Biblical Christianity with India's belief in reincarnation and karma.

In April 2000, in Evergreen, Colorado, a social worker named Connell Watkins and her three associates—none with any training in psychiatry—charged a Durham, North Carolina, pediatric nurse $7,000 for two weeks of therapy on her adopted daughter Candace Newmaker. The girl, 10, was said to be suffering from "attachment disorder," characterized by her inability to form loving relationships. At the culmination of "attachment therapy" the child was wrapped in a flannel blanket and large pillows shoved against her face.

Candace cried out repeatedly that she couldn't breathe and was about to vomit, but the therapists kept pushing the pillows and urging her to fight her way out of the "womb" through a twisted part of the blanket. Candace soon stopped crying. A half-hour later

the therapists unwrapped the blanket. Candace was lying in vomit, not breathing. She died of asphyxiation the next day at a Denver hospital. Watkins and her colleague Julie Ponder were arrested and charged with child abuse resulting in death; their trial began in early April. (For more on this case see "New Age 'Rebirthing' Treatment Kills Girl," SI 24[5] September/October 2000.)

If you care to learn more about primal therapy you can read Janov's books, and *A Scream Away from Happiness*, by Daniel Casriel (1972). For attacks on the therapy and its spinoffs see the chapters in Margaret Thaler Singer's *Crazy Therapies* (1996), R.D. Rosen's *Psychobabble* (1977), and Michael Rossman's *New Age Blues* (1979). Rossman's chapter is titled "The I-Scream Man Cometh."

I close on a depressing note. In the spring of 2000 Prometheus Books published Janov's latest work, *The Biology of Love*. In an ad for the book on Janov's Web site, Janov calls it "the most important book of the century." It concerns such questions as, "What makes us humans, the hormones of love, shaping personality in the womb, the nature of feeling, the power of love, the origin of anxiety and depression, the source of addiction and obsessions, sleep and eating disorders, the causes of sexual act out, and many more."

On January 2, 2001, E. Patrick Curry, an articulate consumer health advocate in Pittsburgh, sent Paul Kurtz, founder and head of Prometheus, a strong letter protesting the book's publication. Long an admirer of Prometheus for its willingness to publish books *attacking pseudoscience—books other* publishers are reluctant to take—Curry urged Kurtz to withdraw the book and issue a mea culpa for the failure of Prometheus editors to recognize Janov's book as bogus psychiatry.[2]

Curry cited an incredible passage on page 319 of *The Biology of Love* that should have been a tipoff to Prometheus editors. Janov reports that a photograph of a primal, in which a patient is experiencing rebirth, shows the fingerprints of the obstetrician miraculously appearing on the patient's legs! "The first time I saw this," Janov writes, "I was as skeptical as I am sure many readers are now. But it happens and is not a chance occurrence."

If you can believe that, you can believe anything Janov says. To keep up with the doings of what he now calls his Primal Center, in Venice, California, you can check the center's Web site at www.primaltherapy.com. Janov's earlier Primal Institute is now run by his ex-wife Vivien.

Notes

1. Grof is a Czechoslovakian-born psychiatrist, 1960s LSD researcher, and paranormalist now living in the United States. SUNY Press has published several of his controversial books. One of Carl Sagan's rare lapses is his unfortunate chapter on Grof in *Broca's Brain*.

In his 1993 book *The Holotropic Mind*, Grof credits LSD with changing him from an atheist into a mystic. He writes (page 18): ". . . we can reach far back in time and witness sequences from the lives of our human and animal ancestors, as well as events that involved people from other historical periods and cultures with whom we have no genetic connection whatsoever. Through our consciousnesses, we can transcend time and space, cross boundaries separating us from various animal species, experience processes in the botanical kingdom and in the inorganic world, and even explore mythological and other realities that we previously did not know existed."

2. Paul Kurtz responded to Curry, with a copy to me, on February 7. He noted that despite Prometheus's review process, "We may sometimes err. We are not infallible." But he noted that Prometheus has a long tradition of publishing unpopular books, and criticisms come from virtually every viewpoint. Kurtz said he appreciated Curry's distress with Janov and said he himself was also dubious of "primal scream." He said Prometheus is still committed to a rationalist-scientific agenda but contended that Curry's suggested remedies could be considered suppression. I would consider them damage-control. □

GOBBLEDYGOOK AND CHARM from page 15

But not everyone there was a firm believer. A woman who works for AAAS shared my views. She told me a story about her father, a well-known physician who had passed away recently. In going through his belongings after his death from cancer, she was horrified by one discovery. No, it wasn't pornography or any other typical secret stash found after the death of a loved one, but bottles and bottles of every kind of herbal remedy now on the market, thanks to passage of The Dietary Supplement and Health Education Act of 1994. I could tell that she was still terribly upset by this discovery, and although they were probably worth hundreds of dollars, she felt that the right thing to do was to throw them away, which she did.

The last person I had an opportunity to chat with at the reception was Dr. Jonas himself. During this conversation, it suddenly dawned on me why he made such an effective spokesperson for alternative medicine. He is the quintessential politician.

One of the long-standing problems with communicating science to the public is that the scientific community has a paucity of politicians, leaders who are so polished and charming and charismatic that people are naturally drawn to whatever it is they have to say. Their words don't need to be convincing, because it's their style and personality that do the heavy lifting. Dr. Jonas fits this model of the ideal spokesperson.

I managed to ask Dr. Jonas several questions, and I couldn't help noticing how skillfully he managed to dodge each one. Talk about a good politician!

For example, I mentioned that I was reading Robert Park's recent book *Voodoo Science*, and that it contained several unfavorable references to Dr. Jonas.

Would he care to comment on what Professor Park had said about him? But rather than answer the question, he responded by saying how impressed he was that Park has now become a "good skeptic." According to Dr. Jonas, Park has gone from being a not-so-good skeptic to being a really good one. I got similar non-answers to my other questions.

All in all, the afternoon I spent at the seminar proved to be quite insightful, although I realize that my observation that people are easily deceived by a lot of fancy words and a winning personality is really nothing new. Alternative medicine certainly isn't the first kind of pseudoscience to be sold in that way, and it won't be the last. □

In Search of Fisher's Ghost

During an investigative tour Down Under, I was able to examine the persistent legend of "Australia's most famous ghost" (Davis 1998). I was generously assisted by magic historian Peter Rodgers with whom I shared several other adventures (Nickell 2001).

One writer has commented, "It is a mystery why some ghost stories catch the public's imagination and survive while others, often more shocking and more credible, are forgotten" (Davis 1998). He cites the story about Frederick Fisher, which has been related in countless newspaper articles, as well as poems, songs, books, plays, an opera, and other venues (Davis 1998) and provided the inspiration for a movie (Fowler 1991). It once attracted the attention of notables like Charles Dickens, who published a version in his magazine *Household Words*, and entertainer John Pepper, who used it as the subject of one of his "Pepper's ghost" stage illusions in Sydney ca. 1879 ("Illusionist" 1984). Today, Fisher's ghost remains the subject of an annual festival. All this—even though the ghost reportedly appeared "to just one man on one occasion" long ago (Davis 1998).

The story began June 17, 1826, with the disappearance of Frederick Fisher. Fisher was a "ticket-of-leave man"—a paroled convict—who had acquired land at Campbelltown where he built a shack. Unfortunately he also caroused there with itinerants and other ticket-of-leave men including his neighbor and best friend George Worrell (or Worrall). When Fisher found himself in debt and facing possible arrest, he trustingly signed his property over to Worrell—either to conceal or to protect his assets. But when Fisher was released from prison after six months and returned to his farm, he found Worrell had been claiming it as his own.

After Fisher disappeared, Worrell resumed possession of the property, telling anyone who inquired that his friend had returned to England in search of his estranged family. The fact that Worrell wore Fisher's clothes and—to prove his ownership of one of Fisher's horses—offered a crudely forged receipt soon raised suspicions.

On September 23 the Colonial Secretary's Office offered a reward for "the discovery of the body" of Frederick Fisher, or a lesser reward for proof that he had "quitted the Colony" ("Supposed Murder" 1826). Subsequently, a local man named James Farley reportedly had an encounter with the ghost of Fisher. Farley was walking near Fisher's property one night and saw an apparition of the missing man sitting on a fence, glowing eerily and dripping blood from a gashed head. Moaning, the phantasm "pointed a bony finger in the direction of the creek that flowed behind Fisher's farm" (Davis 1998). Thus prompted to search the area, police soon dug up Fisher's corpse. Worrell was convicted of the murder and reportedly confessed just before his hanging (Fowler 1991, 13).

Such are the main outlines of the story. Queensland writer Richard Davis observes in his book *The Ghost Guide to Australia* (1998), "From the beginning distortions occurred—almost every aspect of the story was changed and romanticised so that truth became indistinguishable from fiction." Indeed, the version published by Charles Dickens ("Fisher's Ghost" 1853) contains numerous altered details—"Penrith" for *Campbelltown*, "Smith" for *Worrell*, etc.—that link it to a *fictionalized* account written by Australian writer John Lang (n.d.).

Those promoting the tale cite an alleged deathbed statement by the percipient James Farley (or "John Hurley" in the earliest versions [Cranfield 1963]). Queried about the matter on his deathbed, Farley supposedly raised himself on an elbow and told his friend: "I'm a dying man, Mr. Chisholm. I'll speak only the truth. I saw that ghost as plainly as I see you now" (Davis 1998; Cusack 1967, 3). Alas, the story is not only unverified but has a suspiciously literary quality about it.

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In fairness it should be acknowledged that debunkers have offered their share of doubtful claims as well. One purported explanation for the ghost was given by a seventy-three-year-old barber. He said he heard it from his grandfather who in turn allegedly learned it from an ex-convict who had secretly witnessed the murder and burial. Wanting to expose the truth but afraid of being implicated, he hit on a plan. He fashioned a pair of cloaks—one white, another black—wearing the first at night to simulate the ghost. When some traveler happened by, he moaned and pointed to the burial site in the swamp. Then readying the black cloak as he walked toward that spot, he would suddenly pull it over him so that "to the terrified onlooker it seemed that the ghost had suddenly disappeared." Supposedly this repeated ruse brought the desired result and the corpse was searched for and discovered—believe it or not! ("Ghost" 1955)

Another hand-me-down tale was related by a seventy-four-year-old resident. He said that Farley simply "saw a man whom he took to be Fisher (but it was not Fisher) sitting on the rail of the bridge." When the man "dropped from the rail of the bridge apparently into the weeds" and so seemed to vanish, "Farley thought it must have been a ghost on account of the sudden disappearance" (Lee 1963). While such an incident could happen, there is no good evidence that it did.

Not surprisingly, those inclined to dismiss ghost stories have suggested the tale was simply a journalistic invention. One writer has stated that "there can be little doubt that it was a hoax first published by a Sydney magazine" (Cranfield 1963). In fact, however, that account—in the March 1, 1836, *Teggs Monthly*—was preceded by an anonymous poem published years earlier (September 1832) in *Hill's Life in New South Wales*. Titled "The Spirit of the Creek," it bore a prefatory note that it was based on the murder of "poor F*****" at Campbelltown. It is important to note that this was a creative production. Not only was *Hills' Life* a literary paper and the narrative written in verse (thus inviting "poetic license"), but the story was actually fictionalized. For example, Fred Fisher became a rich ex-convict named "Fredro" and the murderer Worrell was represented as "Wurlow" (Fowler 1991, 15).

To assess the credibility of the Fisher's ghost story, it is necessary to go back in time, as it were, to the February 2, 1827, proceedings of the Supreme Criminal Court ("Supreme" 1827). As

An artist's impression of the appearance of Fisher's Ghost beckoning to a resident named Farley, in 1826.

others have previously noted (e.g., Cranfield 1963), the trial records make absolutely no mention of a ghost. In addition to this negative evidence, I was struck by the positive evidence in the proceedings that Fisher's missing body had actually been located in a rational rather than supernatural manner. Constable George Looland testified that, on the previous October 20, blood found on several fence rails at the corner of Fisher's paddock led him to search the area. He was assisted by two aboriginal trackers who soon reported traces they thought was "the fat of a white man" (presumably human tissue) floating on the creek. Proceeding on, they came to a spot (apparently identified by a disturbance of the marshy area) which they probed with an iron rod. One of the trackers "called out that there was something there," and a spade was procured to excavate the site. Soon the search party had uncovered the "left hand of a man lying on his side." The coroner was summoned, and (the next morning) the body of Fisher was exhumed and examined, whereupon "several fractures were found in the head" ("Supreme" 1827).

However the story of Fisher's ghost was actually launched—and it may have originated with the previously mentioned anonymous poem in 1832—the legend has persisted. In the narrative the phantom behaves as one of those purposeful spirits of yore who sometimes "advised where their bodies might be discovered" (Finucane 1984, 194). Folklorists recognize such tales as types of *supernatural legends*—that is, "supposedly factual accounts of occurrences and experiences which seem to validate superstitions" (Brunvand 1978).

Evidence of folklore in progress is quite evident. Numerous variations in the tale (apart from the fictionalizing process) are suggestive of oral transmission. Consider a specific example. Since at least the 1950s lighthearted vigils for the ghost have been held, with crowds typically gathering at midnight on June 17. The chosen site is the bridge across Fisher's Ghost Creek because, according to one account, "it was on the rail of the bridge . . . that Fisher's Ghost was always seen" ("Fisher's Ghost" 1957). But when Peter Rodgers and I made our pilgrimage to the spot, locals told us (and other sources confirmed) that the original bridge was not in precisely the same place. More significantly, the earliest accounts of the story have the ghost sitting on the rail of a *fence*. With that simple transformation of a *motif* (as folklorists term a narrative element)—from fence rail to bridge rail—the *site* of the purported apparition also became translocated. Nevertheless, "ghost" sightings have been reported there, one of the most noteworthy of which

IN SEARCH OF FISHER'S GHOST
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The Shrinking Filedrawer

On the Validity of Statistical Meta-analyses in Parapsychology

It may be easier to explain parapsychological experiments on the basis of chance than has been previously thought.

DOUGLAS M. STOKES

There are 86,493,225 ways to pull 12 rabbits out of a hat containing 30 rabbits. This and similar facts have major implications for the validity of the statistical meta-analyses that form much of the present case for the existence of such parapsychological phenomena as ESP and psychokinesis.

The above factoid is just one example of the combinatorial explosion, or the counterintuitively large number of ways that one may select k objects from a set of n objects. For instance, there are more than 635 billion 13-card bridge hands that can be dealt from a 52-card deck.

My attention was drawn to the implications of the combinatorial explosion for parapsychology as I read a recent

article in the *Journal of the Society for Psychical Research* describing an ESP study conducted by Alan Vaughn and Jack Houck (Vaughn and Houck 2000). Vaughn and Houck's experimental data consisted of the ESP-guessing results sent to them by twelve subjects who had used their newly developed intuition-training software. Vaughn and Houck state that the probability that the level of success achieved by these subjects could have occurred through plain luck (i.e., in the absence of ESP) is equal to .00036. As this probability is very small, the authors conclude that their experiment provides statistically significant evidence of an ESP effect.

The twelve subjects who voluntarily contributed data to Vaughn and Houck's study were self-selected from a group of subjects of unknown size who also participated in the experiment, but whose results were never recorded because they were never sent in. As the subjects knew their ESP scores before sending them in, it might reasonably be expected that only those subjects who were excited by the high scores they had attained would submit their results. Thus, it is possible that the entire group of subjects actually scored at chance, and that there would be no evidence for ESP if *all* the scores were examined rather than only the scores of the twelve subjects who chose to mail their results to Vaughn and Houck.

The odds against the results of the twelve subjects being due to chance are 2,778 to 1 according to Vaughn and Houck's statistical analysis. They argue that, for these results to be ascribed to data selection, the larger group of subjects would have had to consist of 33,333 subjects. (This number is obtained by multiplying 12 by 2,778, the deficiency of 3 subjects being due to rounding error). They further state that they have sold fewer than 1,000 copies of their software, thus implying that the larger group of subjects could have consisted of at most 1,000 subjects. As someone who has taught statistics for over twenty years, I found Vaughn and Houck's estimate to be suspiciously high.

It is true that 33,333 subjects can be divided into 2,778 (actually 2,777.75) disjoint (i.e., nonoverlapping) sets of 12 subjects. But this is not the issue. The issue is rather how many potential sets of 12 subjects could have been chosen from a population of 33,333 potential subjects. The answer is a staggering 3.92×10^{45} sets. This number is computed from the familiar combinatorial formula $C(33333,12) = 33{,}333!/(12! \times 33{,}321!)$.

Even if one assumes that only 500 potential subjects existed, the number of possible sets of 12 subjects that may be chosen is 4.46×10^{23}, nearly Avogadro's number (the number of molecules in a mole). Thus, if the 12 subjects with the best scores were to submit their data, one might expect the odds against chance to be more than 10^{23} to 1, even in the absence of psi.

Even if only 17 potential subjects existed, there would be 6,188 possible sets of 12 subjects that may be chosen from a set of 17 subjects. Thus, I initially thought that this number of potential subjects would suffice to explain Vaughn and Houck's results, in that if only the 12 subjects with the best scores were to submit their results, one would expect results that would occur only once in 6,188 times. Thus, it seemed that one only had to assume that there were five subjects who took part in the guessing but did not send in their results in order to wipe out the evidence for ESP.

Gerald Fried

A Glossary of Statistical Terms

Meta-analysis: The statistical analysis of a group of experiments to determine the overall statistical significance of a reported effect. Meta-analysis may also be used to evaluate the overall size of an effect across experiments and to determine the influence of moderator variables on the reported effect.

n!: "n factorial." For a positive integer *n*, *n*! represents the product of all the positive integers up to and including *n*. For instance, 5! = 5×4×3×2×1 = 120.

C(n,k): The number of ways that a set of *k* objects can be chosen from a set of *n* objects. $C(n,k) = n! / (k! \times (n - k)!)$. For instance, the number of ways that two objects can be chosen from a set of five objects is $C(5,2) = 5! / (2! \times 3!) = 120 / (2 \times 6) = 10$.

Statistical significance: In the present context, the probability that the results of an ESP experiment or series of experiments would occur by chance. For instance, if the results of an ESP experiment are significant at the .01 level, then there is less than a 1% chance that an ESP effect of the observed size or larger would have occurred by chance. Generally, an ESP effect would not be regarded as statistically significant if it did not reach the .05 level of significance, as in that case there would be a greater than 5% probability that such an effect could occur through random fluctuations (i.e., in the absence of ESP).

Filedrawer size: The number of unpublished experiments that would need to be assumed to exist in order to explain away a significant effect found by meta-analysis as being due to data selection (e.g., the tendency not to report or publish experiments that do not demonstrate the effect).

—Douglas M. Stokes

Analyzing Subjects Versus Scores

However, I soon realized that the statistical tests were directed at the improbability of the psi scores, not of the sample of subjects. My next step was therefore to conduct a standard "filedrawer" analysis of the kind that is often used in evaluating the statistical significance of psi research. The filedrawer analysis is directed at determining how many additional subjects (or experiments) with scores averaging exactly at chance would need to be assumed to exist in order to wipe out the statistical significance of a parapsychological study (or series of experiments). In the case of Vaughn and Houck's results, the filedrawer analysis indicated that 39 such additional subjects would be required. But even this number seemed suspiciously high to me. After all, there are more than 158 billion sets of 12 subjects that can be chosen from a set of 51. This seemed like overkill.

Then I realized what was wrong with statistical meta-analysis as it is traditionally used in parapsychological research. It assumes that the results of the unselected subjects or studies are at chance. However, suppose that a large number of experiments are being conducted and only those with the highest scores are being reported or published. In that case, one would expect that the remaining scores would average *below* chance, rather than at chance as is assumed in the usual statistical meta-analysis procedures employed by parapsychologists.

I therefore performed ten computer simulations in which I generated random data for 30 subjects and then analyzed only the 12 highest scores. In every case, the results were statistically significant at the .01 level, and in four out of the ten cases the results were even more significant than those reported by Vaughn and Houck. Thus, one does not have to assume that there must be 33,321 additional subjects to explain Vaughn and Houck's results, as those authors contend, nor must there be 39 additional subjects as the traditional meta-analysis in parapsychology would indicate. There only have to be 18 subjects who took part in the experiment but did not send in their scores in order to explain Vaughn and Houck's results. It does not seem at all implausible that there might be this many such unrecorded subjects.

It is not surprising that only 18 additional subjects are required in order to explain Houck and Vaughn's results on the basis of data selection. After all, there are more than 86,493,225 different sets of 12 subjects that can be chosen from an initial set of 30 subjects, just as there are that many ways of pulling 12 rabbits out of the overpopulated hat described earlier. With over 86 million sets of subjects to chose from, it is not surprising that the set of subjects with the highest scores would have statistically significant results, even in the absence of ESP.

Ganzfeld Results Re-analyzed

The combinatorial explosion has major implications for the validity of traditional statistical meta-analyses in parapsychology. A considerable portion of the existing evidence for psi phenomena such as ESP, precognition, and psychokinesis is based on the relatively young science of statistical meta-analysis. To give a (more or less randomly chosen) example of how statistical meta-analysis usually works, let us consider Charles Honorton's meta-analysis of a series of twenty-eight ESP experiments that were conducted using ganzfeld stimulation (Honorton 1985). Honorton's meta-analysis was performed in response to CSICOP fellow Ray Hyman's criticisms of ganzfeld research.

(The ganzfeld, for SKEPTICAL INQUIRER readers who may be unfamiliar with the term, is a homogenous visual field, which is often produced by shining red light on ping pong ball halves strapped over a subject's eyes. While under the ganzfeld stimulation, the subjects attempt to use their psychic powers to describe a picture or movie being viewed by a sender or

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being shown on a computer screen in a distant room.)

Based on the meta-analysis, Honorton concluded that the aggregated results of the 28 ganzfeld experiments were statistically significant, with odds of over a billion to one against their occurrence by chance.

As discussed above, a standard practice in statistical meta-analysis, at least as practiced in parapsychology, is to compute the size of the "filedrawer." The filedrawer is the number of unpublished experiments with null results that would have to be assumed to exist in order to explain away the evidence for psi provided by these 28 experiments as being caused by data selection. (Data selection in this case consists of the tendency of parapsychological researchers to publish successful psi experiments and not to publish experiments that fail to obtain evidence of psi.)

Honorton conducted the standard filedrawer analysis and concluded that there would have to be 423 unreported studies averaging null results in order to attribute the overall effect found in the 28 experiments in his sample as being due to data selection. Surely, the argument goes, there cannot be this many unpublished studies in view of the small size of the ganzfeld research community in parapsychology and the difficulty and expense of conducting such research. After all, one is talking about more than fifteen unpublished studies for each study that was published.

(As an aside, it should be noted that the filedrawer analysis is primarily directed at ruling out chance coincidence as an explanation of the results. The meta-analysis does not exclude the possibility that the significant results could be due to fraud or methodological flaws.)

Again, however, the standard filedrawer analysis may be quite flawed. As discussed above, if only the best results are selected for publication, one might expect the results of the remaining experiments to average *below* chance, rather than *at* chance as assumed in the usual filedrawer analysis. This would substantially lower the number of unpublished studies that would need to be assumed.

Computer simulation indicates that the level of statistical significance found by Honorton is quite frequently attained when one analyzes only the 28 experiments with the best outcomes out of a set of 90 experiments with randomly generated data. Thus, the size of the filedrawer needed to explain the results of these 28 ganzfeld experiments appears to be closer to 62 unpublished studies than to the estimate of 423 obtained by Honorton using the traditional filedrawer analysis. This is perhaps not so startling when one considers the fact that there are 1.55×10^{23} ways to choose a set of 28 experiments from a population of 90 experiments. With this many options, it is not surprising that one can find a set of 28 experiments with odds against chance of a mere billion to one. While it may be ludicrous to suppose that there are 423 unpublished experiments, it is not at all ludicrous to suppose that there might be 62. Now we are talking about only a little over two unpublished studies for each study that was published, rather than fifteen. Surely it is not beyond the realm of possibility that only one-third of the ganzfeld studies conducted are eventually published.

Statistical meta-analysis forms a large part of the foundation for the scientific case for psi phenomena such as ESP and psychokinesis. The foundation may be less solid than it appears.

References

Honorton, C. 1985. Meta-analysis of psi ganzfeld research: A response to Hyman. *Journal of Parapsychology*, 49: 51–91.

Vaughn, A. and J. Houck. 2000. Intuition-training software: A second training study. *Journal of the Society for Psychical Research*, 64: 177–184. □

The Pokémon Panic of 1997

In 1997, an episode of the cartoon Pokémon *allegedly induced seizures and other ailments in thousands of Japanese children. Though popularly attributed to photosensitive epilepsy, the episode has many of the hallmarks of mass hysteria.*

BENJAMIN RADFORD

Pokémon is everywhere; more than a game, more than a movie, even more than a merchandising juggernaut, it is a phenomenon. It has spawned countless video games, comic books, Web sites, video tapes, magazines, clubs, music CDs, books, trading cards, three films, and, of course, an animated television series. It became such a cultural phenomenon that *Time* magazine featured Pokémon on the cover of its November 22, 1999, issue.

For kids it's an engaging pastime; for Nintendo, it's a multibillion-dollar moneymaker, possibly the largest marketing effort in the history of toys. (The theme song's refrain contains a catchy ode to merchandising, "Gotta catch 'em all!") Pokémon creator Satoshi Tajiri spent six years

developing the game and world of Pokémon. Pokémon (a shortening of "Pocket Monsters," from the original Japanese name *Poketto Monsuta*) began as a video game for the hand-held Nintendo Game Boy system.

The television series centers on young boys and girls who wander the world of Pokémon looking for small creatures (called Pokémon) to capture, befriend, and train for battle against other trainers (and their Pokémon) in the Pokémon League. The ultimate goal is for the kids to collect one of every species and become Pokémon Masters. There are currently more than 150 different Pokémon (with more on the way), and each creature has special powers and individual personalities. The most popular Pokémon, Pikachu, looks something like a yellow rat with a lightning-bolt tail and has the ability to shock its opponents with electricity.

Although it is largely forgotten and rarely mentioned in current news accounts of "Pokemania," *Pokémon* wasn't always the benign cartoon whose worst threat was emptying bank accounts. In December 1997, up to 12,000 Japanese children reported illnesses ranging from nausea to seizures after watching an episode of *Pokémon*.

The Episode and the Attacks

On Tuesday night, December 16, 1997, *Pokémon* episode number 38, *Dennou Senshi Porigon* (Computer Warrior Polygon) aired in Japan at 6:30. The program, broadcast over thirty-seven TV stations, was already very popular in Japan, and held the highest ratings for its time slot.

In the episode, Pikachu and its human friends Satoshi, Kasumi, and Takeshi, have an adventure that leads inside a computer. About twenty minutes into the program, the gang encounters a fighter named Polygon. A battle ensues, during which Pikachu uses his electricity powers to stop a "virus bomb." The animators depict Pikachu's electric attack with a quick series of flashing lights.

In all, millions watched the program. In one section of Japan, Aichi Prefecture, an estimated 70 percent of the 24,000 elementary school students and 35 percent of the 13,000 junior high school students watched the program, for a total of more than 21,000 in Aichi alone (*Japan Times* 1997). In Tokyo, the local board of education investigated all public kindergartens, primary and middle schools in the area and found that 50,714 students, or 55 percent of the whole, watched the episode (*Yomiuri Shimbun* 1997c).

At about 6:51, the flashing lights filled the screens. By 7:30, according to the Fire-Defense agency, 618 children had been taken to hospitals complaining of various symptoms.

News of the attacks shot through Japan, and it was the subject of media reports later that evening. During the coverage, several stations replayed the flashing sequence, whereupon even *more* children fell ill and sought medical attention. The number affected by this "second wave" is unknown.

Doctors said that children "went into a trance-like state, similar to hypnosis, complaining of shortness of breath, nausea, and bad vision . . ." (Snyder 1997). According to the *Yomiuri Shimbun* newspaper, "Victim's families reported that children passed out during the broadcast, went into convulsions, and vomited" (*Yomiuri Shimbun* 1997b). Yet another account gives a slightly different set of ailments: "Most children reportedly said they felt sick and had vision problems . . ."(Next generation.com 1997).

The victims themselves described their attacks thusly: Ten-year-old Takuya Sato said "Toward the end of the program there was an explosion, and I had to close my eyes because of an enormous yellow light like a camera flash" (MSNBC 1997); a fifteen-year-old girl from Nagoya reported, "As I was watching blue and red lights flashing on the screen, I felt my body becoming tense. I do not remember what happened afterward" (*Asahi Shimbun* 1997a).

Information regarding exactly how many children became sick (and when) and how many were taken to hospitals is piecemeal and at times contradictory, but, as with many aspects of this case, specific figures are known for certain areas. One hospital in western Tokyo started to receive children shortly after 7 P.M. A *Yomiuri Shimbun* newspaper story states that "A total of six children aged between 9 and 15 were taken to the hospital Tuesday night. . . . After treatment there, all six returned home before midnight, a hospital employee said" (*Yomiuri Shimbun* 1997d).

Although many news accounts simply state that around 12,000 children were sickened and 700 had seizures and/or were hospitalized, the truth is somewhat more complex.

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The Aftermath

The story of thousands of children made sick by their favorite cartoon raced through Japan. The following day TV Tokyo issued an apology, suspended the program, and said it would investigate the cause of the seizures. Officers from Atago Police Station, acting on orders from the National Police Agency, questioned the program's producers about the cartoon's contents and production process. The Health and Welfare Ministry held an emergency meeting, discussing the case with experts and gathering information from hospitals. Video retailers across the country pulled the series from their rental shelves.

Outraged mothers accused TV Tokyo of ignoring their children's health in the race for ratings, while other parents called for the implementation of an electronic screening device similar to the American V-chip that would block intense animation. Even Prime Minister Ryutaro Hashimoto weighed in, with a comment of dubious relevance: "Rays and lasers have been considered for use as weapons. Their effects have not been fully determined." Although a spokesman from Nintendo rushed to explain that the only link between its game and the cartoon was the characters, the company's shares dropped nearly five percent on the Tokyo stock market.

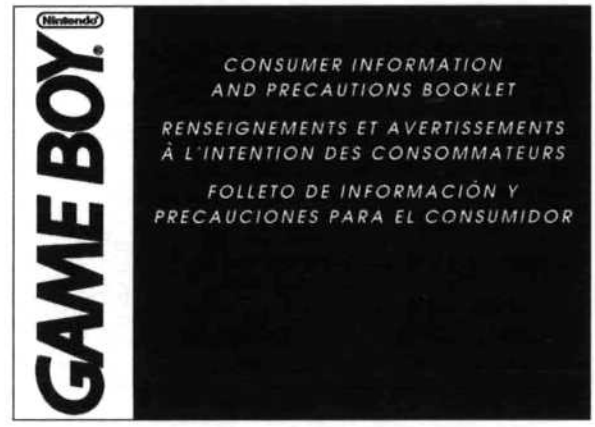
TV Tokyo put warning labels on all future and past *Pokémon* episodes. Despite the scare, both kids and adults soon missed *Pokémon*. It was back on the air by April, along with the new release of spring shows, and promptly climbed up to third in the ratings.

Searching for Answers

Several reasons were put forth to explain why the episode might have caused the problems it did. That bright flashing lights can trigger seizures in people with photosensitive epilepsy (PSE) is fairly well established. There seems little doubt that at least some children did in fact experience seizures and other afflictions from watching *Pokémon*. Researchers believe the technique of flashing lights caused the problem, perhaps made worse by the red/blue color pattern. And Dr. Akinori Hoshika, a neurologist at Tokyo Medical College, confirmed that optical stimulation can produce some of the symptoms found in the *Pokémon* victims (Sullivan 1997).

In 1994, British commercial television ads and programs were limited to a rate of three flashes per second. The limit followed a 1993 incident in which an ad for noodles featuring fast-moving graphics and bright flashes sparked three seizures.

In 1991, an American woman named Dianne Neale suffered seizures from hearing *Entertainment Tonight* co-host Mary Hart's eerily perky voice. Her doctors said Hart's electronically transmitted voice triggered Neale's epilepsy by creating abnormal electrical charges in her brain (MSNBC 1997).



EPILEPSY WARNING

⚠WARNING

READ THIS NOTICE BEFORE YOU OR YOUR CHILD USE ANY VIDEO GAME

A very small portion of the population have a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are commonly present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. Players who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. a seizure or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience any of the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, **DISCONTINUE USE IMMEDIATELY** and consult your physician.

FOLLOW THESE PRECAUTIONS WHENEVER USING VIDEO GAMES:

- When using your NES®, Super NES® or Nintendo® 64 do not sit or stand too close to the television screen. Play as far back from the screen as possible.
- Play video games on the smallest available television screen.
- Do not play if you are tired or need sleep.
- Always play in a well lit room.
- Be sure to take a 10 to 15 minute break every hour while playing.

REPETITIVE STRAIN WARNING

⚠WARNING

Some people may experience fatigue or discomfort after playing for a long time. Regardless of how you feel, you should ALWAYS take a 10 to 15 minute break every hour while playing. If your hands or arms become tired or uncomfortable while playing, stop and rest. If you continue to experience soreness or discomfort during or after play, listen to the signals your body is giving you. Stop playing and consult a doctor. Failure to do so could result in long term injury.

If your hands, wrist or arms have been injured or strained in other activities, use of your system could aggravate the condition. Before playing, consult a doctor.

Figure 1. Epilepsy warning on video game booklet.

After several teens suffered seizures while playing Nintendo video games, the company began including warning labels on much of its software (see figure 1). The notice told users that the games' graphics and animation could cause a *shigeki*, a strong stimulation resulting in unconsciousness or seizures.

In the *Pokémon* case, though, there appeared to be few leads to go on. Although the bright flashes seemed to be the likely culprit, the flashes had been used hundreds of times before without incident. The technique, called *paka-paka*, uses different-colored lights flashing alternately to create tension. It is common in *anime*, the distinctive Japanese animation technique used in *Pokémon* (and many other popular cartoons, such as *Voltron*, *Sailor Moon*, and *Speed Racer*).

There was apparently very little difference between episode 38 and the other *Pokémon* episodes. The best guess was that the sheer number of flashes or length of the segment (reported as five to eight seconds, depending on the source) made the difference. Producer Takemoto Mori had used virtually identical *paka-paka* in most of the previous episodes, with slight variations in color and background combinations. "During editing, that particular portion didn't call my attention or bother me," he said. All *Pokémon* episodes were pre-screened before airing, and no problems were reported.

Despite all the furor and theories, a clear genesis of the Pokémon panic was elusive. After four months Nintendo

announced that it could find no clear cause for the outbreak, and *Pokémon* returned to the airwaves. Further research was left to doctors later that year. To date there have been only a handful of accounts and analyses of the *Pokémon* episode in scientific journals, three of them published in the *Annals of Neurology* (one by Takashi Hayashi et al., another by Yushiro Yamashita et al., and a much more in-depth piece by Shozo Tobimatsu et al.).

Hayashi et al. (1998) surveyed patients in the Yamaguchi prefecture (population 1,550,000) and found twelve affected children with no history of epilepsy. During the program, two had fainted and ten had tonic-clonic convulsions (in which the victims lose consciousness, usually with a stiffening of the body and forceful expiration of air, along with muscle contractions and other symptoms). Eleven of the twelve had "epileptic EEG abnormalities or photosensitivity." The researchers concluded that the children had latent photosensitive conditions that became seizures when induced by the flashing lights. They further estimated the incidence of seizures triggered by *Pokémon* was greater than 1.5 per 10,000, ten times the incidence found by British researchers (Quirk et al. 1995).

Yamashita et al. (1998) investigated all the children in eighty elementary schools in an area with a population of 470,807. Out of the 32,083 students, only one child had a convulsion, but 1,002 reported minor symptoms. As half of all boys and girls saw the program, Yamashita et al. suggest that 6.25 percent of the children were affected. This is similar to the percentage of children in the general population who show photosensitivity (8.9 percent).

Tobimatsu et al. (1999) studied four children who had been affected by *Pokémon*. The authors write that "The probable cause [of the attacks] was PSE [photosensitive epilepsy] because a tremendous number of children developed similar symptoms at exactly the same time in a similar situation. . . . However it is not clear as to why so many children without any previous seizures [75%] were also affected or exactly which components of the cartoon [caused the attack]."

None of the children had a previous history of convulsions before the *Pokémon* episode, and all were found to be more sensitive to rapid color changes than monochromatic ones. All were considered to have PSE. The researchers suggest that "the rapid color changes in the cartoon thus provoked the seizures." The researchers believe that the children's sensitivity to color—in particular rapid changes between red and blue—played an important role in triggering the seizures (Tobimatsu et al. 1999). Four children, however, represent a very small sample, and the results found may not be applicable to the general population.

The childrens' viewing habits and the physical setup of Japanese homes exacerbated the effect. In a country with more than 126 million people in an area the size of Montana and a population density of 865 per square mile, Japanese homes are typically quite small. Big-screen televisions are the norm, and most living rooms could aptly be described as small theaters. Many children sit very close to the television as well; one 14-year-old boy sitting three feet from his big-screen television was struck unconscious.

Doubting Doctors and the Hysteria Hypothesis

Yet several doctors expressed skepticism at the reported breadth of the outbreak. Dr. Yashudi Maeda, of a Fukuoka children's hospital, suspected that "the cases [regarding video game seizures] were most likely epileptic fits due to hypersensitivity to light, but I am not sure about the cases in which children just felt sick."

ABC News reporter Mark Bloch (1997) also found some scientists skeptical:

> In fact, epilepsy experts interviewed by ABCNews.com were skeptical the seizures experienced by hundreds of viewers were triggered by an epilepsy-like syndrome. "I've never heard anything like it," said Dr. Jeffrey Cohen, director of the Epilepsy Program at the Clinical Neuro-Physiology Laboratory at New York's Beth Israel Medical Center. He said it's possible that a few of the children watching may have experienced photosensitive-induced seizures. "But it's hard to conceive that 700 did." The director of New York University's Epilepsy Center agrees. "I think there were maybe two or three or ten that went to emergency rooms, then the media picked up the story and that in turn produced a wave of anxiety-based reactions," Dr. Orrin Devinsky said. The reaction could just as likely have been produced by anxiety and hyperventilation, he said.

Rika Kayama, psychologist and author of a book on video games and health, told Kyodo news that the illnesses might have been caused by photosensitive epilepsy or "group hysterics" (Snyder 1997).

To understand why the Pokémon episode may qualify as a case of mass hysteria, a little background is necessary. Mass hysteria (or mass sociogenic illness, as it is also called) begins when individuals under stress unwittingly convert that stress into physical ills. Peers, family members, or friends may also begin exhibiting the symptoms through contagion, in which the suggestion of a threat can be enough to create symptoms. Outbreaks are most common in closed social units (such as schools, hospitals, or workplaces) and where afflicted individuals are under social pressure and stress (Bartholomew and Sirois 1996).

The victims are firmly convinced their illness is "real," although extensive tests and investigations fail to identify a cause for the symptoms. Victims are usually very reluctant to accept the diagnosis, however, and remain convinced of the legitimacy of their illness (Stewart 1991).

It should be understood that the illness complaints are real and verifiable; the victims are not imagining their problems. Episodes of mass hysteria can last anywhere from a couple of hours to a few weeks, with many averaging about a week. The cases usually arise quickly, peak, and then subside just as quickly. Media reports and publicity help fuel the hysteria as news of the affliction spreads, planting the idea or concern in the community while reinforcing and validating the veracity of the illness for the initial victims.

Many aspects of the Pokémon panic lend itself to a diagnosis of mass hysteria:

- Many of the *Pokémon*-induced symptoms reported (e.g., headaches, dizziness, vomiting) are less typical of seizures than of mass hysteria. Conversely, symptoms that are associated with

seizures (e.g., drooling, stiffness, tongue biting) were not found in *Pokémon* victims. Three other symptoms (convulsions, fainting, and nausea) that were common to *Pokémon* victims are associated with both seizures and mass hysteria (see table 1).

(It is important to distinguish seizures from epilepsy. A seizure is a *symptom* of epilepsy, which in turn is a general term for an underlying tendency of the brain to produce a variety of electrical energy that disrupts brain function. Seizures can be brought about through various ways [e.g., a lack of oxygen, brain injury, high fever], and one seizure does not in itself establish epilepsy. There are several types of seizures; research by Tobimatsu et al. found that the *Pokémon* victims they studied all had generalized tonic-clonic seizures, so that is the type I have used for comparison.)

• The incidence of photosensitive epilepsy is estimated at 1 in 5,000 (Cohen 1999). Such an incidence (0.02 percent of the population) comes nowhere near explaining the sheer number of children affected (in some cases nearly 7 percent of the viewers). This is not to say that some children did not endure seizures, but clearly the vast majority of children did not.

• Stress frequently plays an important role in cases of mass hysteria, and Japanese youth are under tremendous academic and social pressures to achieve. Japanese schools in particular are known as high stress-generating institutions, and students with low (or even mediocre) grades have been known to kill themselves. The week the episode aired, many Japanese youths were preparing for high school entrance exams and therefore already under added pressure (*Asahi Shimbun* 1997a). Extraordinary stress by itself cannot and does not trigger epidemic hysteria. Another aspect of Japanese culture, however, may contribute to mass hysteria—the compulsion to conform.

Seizures, Symptoms, and Hysteria

symptom	*gran mal seizure*	*Pokémon attack*	*mass hysteria*
convulsions/ muscle spasm	yes	yes	yes
fainting/loss of consciousness	yes	yes	yes
nausea	yes	yes	yes
drooling/frothing	yes	no	yes
loss of bladder control	yes	no	no
bluish skin	yes	no	no
rigidity/stiffness	yes	no	no
sudden cry	yes	no	no
biting tongue	yes	no	no
headaches	no	yes	yes
bad/blurry vision	no	yes	yes
dizziness	no	yes	yes
vomiting	no	yes	yes
shortness of breath	no	yes	yes

Table 1: A comparison of symptoms typical of gran mal (tonic-clonic) seizures, the Pokémon attacks, and mass hysterias. Aside from the first three symptoms shared by all three afflictions, the symptoms reported by the Pokémon victims more closely match those of mass hysteria than seizures.

Bob Riel (1996), manager at a Boston-based cross-cultural training firm, puts it this way: "One of the most important traits of the Japanese mindset is its collective nature. In Japan, *we* comes before *I*— a concept that's taught early on. Unlike Western children, who are taught to be independent self-thinkers, Japanese children are educated in a way that stresses interdependence, and reliance on others. Many Japanese habits and customs stem from this desire to maintain the group." This type of collective social order makes a fertile ground for contagion.

In addition, some facets of Japanese culture may lend itself toward acting out. When Japanese rock star "Hide" Matsumoto hanged himself in May 1998, three people tried to follow him in suicide; one fourteen-year-old girl hanged herself using a towel, the same method Matsumoto used. A rash of Japanese youth suicides also followed the death of singer Yutaka Ozaki in 1992 (Watanabe 1998).

The Missing Link

While several facets of the incident suggested mass hysteria, there was one large problem with that hypothesis: Most of the children were separated in their own homes. There was little opportunity for contagion, no way for a few real "index" cases to influence other children. With no plausible vehicle for independent children to see or hear others having seizures or symptoms, there could be no mass hysteria. So how did it happen?

The answer is that the *Pokémon* seizures didn't occur just at one time. The phenomenon unfolded in stages, and the chronology of events is crucial. The jump in reported cases (see the timeline) is strong evidence for the role the media played in the panic. According to news accounts of the time, the number of children said to be affected stays around 700 the evening of the *Pokémon* episode (Tuesday night) and the next day. The next morning "Television and newspaper headlines were dominated by the reports. 'Pokémon panic,' screamed national newspaper Mainichi" (MSNBC 1997). Japanese children who hadn't heard about their peers from the news or their parents learned of it that morning, when the seizures "were the talk of the schoolyards" (*Yomiuri Shimbun* 1997b).

Once the children had a chance to hear panicky accounts of what had happened through the media, their friends, and their schools, the number of kids reported the next day to have been affected—*two days before*, Tuesday night—shot up a staggering 12,000 cases. The first accounts of thousands of students being affected appear only after extensive media coverage and the opportunity for contagion in the schools. And schools are among the most common places for outbreaks of mass hysteria to begin (Stewart 1991; Bartholomew and Sirois 1996).

Interesting and possibly similar incidents occurred in the seventeenth and eighteenth centuries in parts of the southern United States during certain religious revival meetings. Fervent participants at the nighttime rallies would ". . . with a piercing scream, fall like a log on the floor, earth, or mud,

Pokémon Panic Timeline

Tuesday December 16, 1997 6:30 P.M.
Pokémon Episode 38 (Computer Warrior Polygon) airs; the flashing lights segment begins at about 6:50; the Fire-Defense agency claims that between 6:50 and 7:30, 618 children were rushed to hospitals with convulsions, headaches, and vision problems.

Tuesday December 16, 1997 (later that night)
Evening news reports that hundreds of children were taken to hospitals from Pokémon fits; some news shows then rebroadcast the scene suspected of causing the seizures. A second wave of children (number unknown) is affected upon hearing the news.

Wednesday December 17, 1997
Pokémon attacks are "the talk of the schoolyards"; "Television and newspaper headlines Wednesday morning were dominated by the reports." The number of victims reported in the media ranges from over 600 to over 700.

Thursday December 18, 1997
Yomiuri Shimbun newspaper reports that nearly 13,000 children had "at least minor symptoms," with 685 taken to hospitals.

Friday December 19, 1997
Yomiuri Shimbun reports on completed investigations by the newspaper and local boards of education, finding the number of children reported to have experienced "fits, nausea, and other symptoms" to be 11,870.

and appear as dead." The limbs and head of those afflicted would jerk and twitch. The episodes often ended with the person collapsing, though sustaining little actual harm from the episode. Neurologist E. Wayne Massey and his colleagues at the National Naval Medical Center examined first-hand accounts of this phenomenon (called "the jerks") and suggested that the wild and apparently involuntary actions may have been triggered by epilepsy which was then imitated by other highly suggestible group members. Massey et al. (1981) write that among the participants "there were perhaps some who had epilepsy. Some meetings were held during the evening with only light from torches flickering in the night. Did this trigger any seizures? Did those few with epilepsy set the stage by example to trigger mass hysterial response from others?"

Conclusion

Although widely regarded either as a mystery or as a simple case of mass epileptic seizures, the 1997 Pokémon panic is much more complex than that. With very few exceptions, much of the media overlooked the possibility of, and contributing factors to, mass hysteria.

Several researchers have noted that mass hysterias are probably more common than currently recognized (see, for example, Jones 2000). Victims are frequently reluctant to accept a verdict of mass hysteria, and Japanese victims are likely to be even more so because of the importance of "saving face" in Japanese culture. But there is no shame in being a victim of mass hysteria, if that is in fact what occurred in December 1997 in Japan.

Acknowledgments

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Note

A lengthier and somewhat more technical version of this article was published in the February 2001 *Southern Medical Journal*, co-written with Robert Bartholomew.

References

Altman, L.K. 2000. Mysterious illnesses often turn out to be mass hysteria. The *New York Times*, January 18, D-1.

AOL.com. 1999. *Parent's guide to Pokemon*. On AOL.com, December 3.

Asahi Shimbun. 1997a. Popular TV cartoon blamed for mass seizures. December 17.

———. 1997b. TV Tokyo to set cartoon guidelines. December 19.

Bartholomew, R. 1997. Collective delusions: A skeptic's guide. SKEPTICAL INQUIRER 21(3):29–33, May/June.

———. 1999. Epidemic hysteria in Virginia. *Southern Medical Journal* 92(8):762, August.

Bartholomew, R., and F. Sirois. 1996. Epidemic hysteria in schools: An international and historical overview. *Educational Studies* 22(3).

Bloch, M. 1997. Seizure or hysteria? *ABCNews.com*, April 15.

Cartoon-based illness mystifies Japan. *CNN Headline News*, December 17.

Chua-Eoan, H., and T. Larimer. 1999. Beware of Pokemania. *Time* 154(21):81, November 22.

Cohen, J. 1999. Personal correspondence.

Hayashi, T., et al. 1998. Pocket Monsters, a popular television cartoon, attacks Japanese children. *Annals of Neurology* 44(3):427, September.

Japan Times. 1997. 'Pocket monsters' shocks TV viewers into convulsions. December 17.

Jones, T.F., et al. 2000. Mass sociogenic illness attributed to toxic exposure at a high school. *The New England Journal of Medicine* 342(2):96, January 13.

Massey, E.W., Brannon, W.L. Jr., and Riley, T.L. 1981. The 'Jerks': Mass hysteria or epilepsy? *Southern Medical Journal* 74(5):607–609.

MSNBC. 1997. Japanese 'toon wreaks havoc. MSNBC.com, December 17.

Next-generation.com. 1997. Monster scare prompts Nintendo stock freeze. December 17.

Pharmaceutical Information Associates, Ltd. 1994. Video games trigger seizures. *Medical Sciences Bulletin*, May.

Quirk, J.A., et al. 1995. First seizures associated with playing electronic screen games: A community-based study in Great Britain. *Annals of Neurology* 37(6):734, June.

Radford, B., and R. Bartholomew. 2001. Pokémon contagion: Photosensitive epilepsy or mass psychogenic illness? *Southern Medical Journal* 94(2): 197–204.

Riel, B. 1996. Understanding the Japanese mindset. *Relocation Journal and Real Estate News*, October; accessed at www.relojournal.com.

Snyder, J. 1997a. Cartoon sickens children. Reuters report on ABC News, December 17.

———. 1997b. 'Monster' TV cartoon illness mystifies Japan. Reuters report, December 17.

Stewart, J.R. 1991. The West Bank collective hysteria episode. SKEPTICAL INQUIRER 15(2):153, Winter.

Sullivan, K. 1997. Japan's cartoon violence TV networks criticized after children's seizures. *Washington Post Foreign Service*, December 19.

Tobimatsu, S., et al. 1999. Chromatic sensitive epilepsy: A variant of photosensitive epilepsy. *Annals of Neurology* 45(6):790, June.

Watanabe, C. 1998. Japanese fans mourn rocker's death. Associated Press report, May 7.

Whitlock, J.A. 1999. Seizures and epilepsy: Frequently asked questions. Northeast Rehabilitation Hospital. New Hampshire: Salem.

Yamashita, Y., et al. 1998. Pocket Monsters attacks Japanese children via media. *Annals of Neurology* 44(3):428 September.

Yomiuri Shimbun. 1997a. TV Tokyo to investigate 'Pocket Monster' panic. December 18.

———. 1997b. Govt. launches probe of 'Monster' cartoon. December 18.

———. 1997c. Psychiatrists seek animation probe. December 19.

———.1997d. 360 children suffer fits while viewing TV cartoon. December 17. □

The Antinoüs Prophecies

A Nostradamoid Project

The prophecies of Nostradamus are said to foretell events centuries in his future. Are the prophecies merely verbal ink blots to which humans "fit" events? Here's a test using random simulations.

CLIFFORD A. PICKOVER

> Thinking is more interesting than knowing, but less interesting than looking.
>
> —*Wolfgang von Goethe*

Michel Nostredame, better known as Nostradamus (1503–1566), was a French astrologer and physician, the most widely read seer of the Renaissance. Nostradamus began making prophecies around the year 1547, which he published in 1555 in a book titled *Centuries.* The work consisted of rhymed quatrains grouped in hundreds, each set of 100 called a "century." Some of his prophecies appeared to be fulfilled, and his fame became so widespread that he was invited to the court of Catherine

de Médicis, queen consort of Henry II of France, where he cast the horoscopes of her children.

I call the attribution of meaning to imprecise, poetic phrases "the Nostradamus effect," and I have long been curious to determine if the Nostradamus effect could be simulated with random quatrains. For example, could it be that Nostradamus's quatrains were like ink blots—not really foretelling anything but permitting people to fit future history to rather nebulous poems? To test this theory, I composed the following quatrains of gibberish just by letting my mind wander and writing the first images that came to my mind. As far as I was concerned, they had no particular meaning or significance. Nostradamus looked into a glass flask of steaming liquid to inspire his visions. I looked into the shiny glass of my computer's CRT. He may have sought to predict the future. I sought to write random phrases with absolutely no correspondence to historical events.

After composing the quatrains, I asked people to match my quatrains with actual historical happenings. I called the quatrains the "quatrains of Antinoüs," which sounded and looked suitably exotic, especially with the umlaut ü symbol. The randomized quatrains are listed in the following table. Judge for yourself. Did I actually channel a man named Antinoüs? Could I be the next Nostradamus, "the Nostradamus from New York"? If my prophecies actually do predict future events, I hope a hundred years from now people will remember me. . . .

Some of the people I surveyed considered the idea that these nine prophecies of Antinoüs may have been actual ancient prophecies. For some reason, quatrain 8 generated a lot of interest. Marsha S., a respondent from California, suggested quatrain 8 prophesied

> the Loma Prieta earthquake back in 1989 when the Bay Bridge broke and everyone had to drive around to get into the city. The doggone thing began in the Santa Cruz mountains . . . "silica" refers to Silicon Valley.

Mike V., from Colorado State University, writes to me:

> Quatrain 8 describes the asteroid impact 65 million years ago that is thought to have killed off the dinosaurs. Here is my logic. 1) *Lightning comes near the peninsula, and one will swim.* An observer near the impact site might see the streaking meteor as it ablated in the atmosphere as lightning. The impact crater is in the Yucatan peninsula. The Chicxulub impact would create massive ocean waves that would wash inland, thus the "*one will swim.*" 2) *There is ruin, Lester, but all is not lost.* The comet caused a huge crater, tidal waves, firestorms, and airborne ash that blocked the Sun for years. The dinosaurs went extinct, as did over 80 percent of life on Earth. (*Not all is lost.*) Life went on, and the small furry mammals that survived led eventually to ourselves. 3) *From the steel and silica brim / Blood, and water, but not at cost.* The impact fused the silicates and sand into a crust around the edge of the crater. If the impact object was a stony carbonaceous chondrite there would be silicates all over the impact site. If it was nickel iron, the site would be ridden with nickel, and iron, which is a component of steel. *Blood and*

The Antinoüs Prophecies, in Quatrain Form

1. After the skirmish, one is wounded the other dies.
The great white one sings by the fire of night.
The European does not rise but merely flies
Near the water, near the cross and knight.

2. An ape came from North, cool and damp.
The stegosauri cry, poe, poe, loe.
My rear end hurts beneath the lamp
Thirty thousand opalescent hearts are low.

3. From the edge America, even as north,
A child, the rock, is born with an amber heart.
The change is nearly as the fourth:
Sea, land, a victory, and a cart.

4. The robber of the west, not of silver but gold
Places the cauldron on darkening wine
Smoke is often less than sold
In a Latin furnace, like a hash, like a line.

5. Princess Charlene in Italy
With a trinity of peppers.
The white dove is a bee.
A hat does not hurt lepers.

6. The capuchin, covered with water
Some holy music, England, after a rain
Sees nothing but the bone daughter
And she, the long one, is in pain.

7. He will be betrayed by a lost friend,
He will leave through feigned desire,
She will be united twice until the end
Near the buildings, desert, and melted mire.

8. Lightning comes near the peninsula, and one will swim.
There is ruin, Lester, but all is not lost
From the steel and silica brim
Blood, and water, but not at cost.

9. The dark head causes problems for the small king.
As much good as Asia, the winged, had done.
There are the enemies, three, a ring,
The exiles scream, while J., the wires, do not shun.

water refers further to the death and destruction caused by the impact. I cannot think of any reason for "*but not at cost*" except to fill out the rhyme.

Another respondent, computer scientist David G. from Lexington, Kentucky, said, "All of these seem to be very prophetic!" This respondent suggested that quatrain 1 foretells the demise of IBM. The first line *"After the skirmish, one is wounded the other dies,"* refers to the fight between IBM and Microsoft. The respondent wrote to me:

IBM's operating system, OS/2, was killed by the fight, and, although Microsoft's Windows was wounded, it survived. Microsoft, being the great white hope, at least initially, sings the praises of their Windows operating system in a world darkened by IBM. Microsoft, whose president is of European heritage, flies into market domination from their location in Redmond, Washington (near the water), and takes over the world. I'm a little confused by the "*cross and knight*" reference. Could it refer to a chess board?

One respondent suggested that quatrain 8 referred to the Cherynobyl nuclear disaster. Denise W. wrote to me suggesting that the first quatrain refers to the wreck of the *Titanic:*

The skirmish could refer to the actual collision. The "*great white one*" is the iceberg that have struck the ship; it would have been "*wounded*" in the crash. The reference to the European refers to a flag that floats on the water in the aftermath. The *cross and knight* may represent some of the remaining wreckage or perhaps survivors in rafts.

L.R. writes regarding quatrain 1:

The first quatrain refers to the American War of Independence. "*After the skirmish*" refers to the war between the colonies and England. "*One is wounded the other dies*" represents America coming to power and the abolition of English rule. "*The great white one sings by the fire of night*" represents America celebrating Independence Day with bonfires and fireworks. "*Near the water, near the cross and knight*" signifies the souls of the English and the remnants of their pride—all slowly returning to England as they feel defeat deep down in their weary bones.

Bill W. suggests that quatrain 1 refers to Moby Dick killing captain Ahab and his crew in the novel *Moby Dick.* Tom R. suggests that the first quatrain refers to King Arthur Pendragon, and that the first line refers to the battle of Camlan where Arthur fought his son Mordred and impaled Mordred on a lance, while Mordred managed to mortally wound Arthur. Line 2 refers to Arthur's flag, which was a red dragon on a field of white. Line 3 refers to Arthur's having united Britain against the Romans. After Arthur died, various conflicts arose regarding succession to the throne. Line 4 refers to Arthur's corpse being laid to rest near a lake, and the term "*the cross*" refers to his famous sword. The knight is his retainer who threw the sword back into the lake.

L.R. writes regarding quatrain 2:

The second quatrain predicts the fall of the Jews under Hitler. "*An ape came from North, cool and damp*" refers to Hitler. "*The stegosauri cry, poe, poe, loe*" represents the Jews crying from the soul of a whole being annihilated. "*My rear end hurts beneath the lamp*" refers to the torture that was inflicted upon the Jews. "*Thirty thousand opalescent hearts are low*" refers to Jewish deaths.

Mike F. suggested that Quatrain 2:

refers to the Carthaginian general Hannibal (247 B.C.–183 B.C.) who commanded the Carthaginian forces against Rome in the Second Punic War. The phrase "*came from the North, cool and damp*" refers to him crossing the Alps to attack Italy. The stegosauri (dinosaurs) are a metaphor for the large elephants Hannibal brought with him. "Poe" refers to the Po River to which the Romans rushed to protect the recently founded Roman colonies of Placentia and Cremona. "*Rear end hurts*" refers to the Allobroges, a Celtic tribe that attacked Hannibal's troops from the rear as they marched to Rome. Thirty thousand refers to the number of infantry.

When I looked up the Punic War in a history book, I found that there was only 20,000 infantry. When I told the respondent this, he replied that "the quatrain refers to all the hearts in: 20,000 infantry, 6,000 cavalry, 38 surviving elephants, and miscellaneous pack animals which might very well produce a sum close to thirty thousand." Other respondees thought this predicted the appearance of Yeti or Bigfoot.

Jessie G., age twelve, had this to say about quatrain 3:

Quatrain 3, with phrases like "*From the edge America, even as north,*" refers to the pilgrims landing at Plymouth rock. "*The change is nearly as the fourth*" means the Fourth of July signing of the Declaration of Independence. "*Sea, land, a victory, and a cart*" refers to how the American revolution was won, because we fought the British in the sea, and on land. I don't know what a cart stands for.

Jack H., an electrical engineer from Portland, Oregon, suggested that quatrain 3 predicts Henry Ford and his impact on society. Jack writes to me:

The first line, "*From the edge America, even as north,*" predicts Henry Ford's birth in Dearborn, Michigan. The line, "*A child, the rock, is born with an amber heart,*" gives us the message that Ford would have a gold heart and show stability in his personal relationships. Although Ford was not a saint, he was a family man and basic good guy as evidenced by the commission of the Oscar II in 1915, the ship he used for his pacifist expedition to Europe to try and end WWI, and the Ford Foundation and Ford hospital. The most significant item is in the fourth line, "*Sea, land, a victory, and a cart.*" "Sea" refers to the ship Oscar II; "land" refers to Ford's tractor company; "a victory" refers to Ford's factories during World War I and II that produced planes, jeeps, tanks, and munitions; and "cart" refers to the first mass produced cars.

Computer scientist Dave G. comments about quatrain 3:

This is another reference to the victory by Microsoft over IBM. Microsoft, located at the edge of America, specifically in the northern part of America, is led by Bill Gates, who was regarded as a child programming prodigy, and whose heart is not blue (e.g., not Big Blue, which is IBM). The change referred to is the domination of the software industry, which occurred with the fourth release of Windows (e.g., Windows 95). The victory is over software running in computers on land, and also on the sea (as witnessed by the Navy's tests of

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using Windows to control their modern ships). The victory represents Microsoft's domination of the software industry, and the cart refers to the cart that Bill Gates needs to carry his profits (e.g., money) with.

Michael D. writes regarding quatrain 3:

> Quatrain 3 may refer to the war of 1812. "*From the edge America*" refers to the fact that one of the final battles of that war, fought near New Orleans, was actually on the "edge," or border, of our country. "*Even as north*" means that this battle, like in the North (which was won by the USA, thereby ending the war, months before the Battle of New Orleans), would be a victory. "*A child, the rock*" may be referring to Stonewall Jackson, the general who won that famous battle. The victory for America over the British was "*nearly as the fourth*" of July, of which the comparison is obvious. Also, this final battle (along with many other parts of the war) was won by Americans in both land and sea.

Bill W. Suggests that quatrain 3 refers to the Mount Rushmore National Memorial in the Black Hills of southwestern South Dakota. Huge sculptures of the heads of presidents George Washington, Thomas Jefferson, Abraham Lincoln, and Theodore Roosevelt are carved in granite on the northeast side of Mt. Rushmore. Other respondees thought quatrain 3 referred to Christopher Columbus.

Some respondees thought quatrain 4 predicted the rise of Hitler. Mike M. suggests that quatrain 4 refers to the Spanish Conquistadors who came to South America and plundered the gold from the native people. The smoke refers to the tobacco that was discovered in the New World and traded for slaves. Dave G. interprets quatrain 4:

> This is another reference to Microsoft replacing IBM as the dominating force in the software industry. The robber again refers to the wealthy Bill Gates, who lives in the western part of the country (Washington state). The reference to gold and not silver represents the high prices charged by Microsoft for its Windows operating system. The cauldron refers to the software development process, and the placing of this on the darkening wine refers to Microsoft's techniques dominating the research being performed by IBM at places like its Almaden Research facility (and, Almaden is also famous for its vineyards, thus the reference to darkening wine). Smoke refers to software, which has no physical properties (e.g., vapor), and the reference to "*often less than sold*" refers to software licensing (e.g., the process of charging for the use of software without the actual transfer of a title to the software). The hash represents a symbol used in programming, and the reference to a line refers to a line of code.

Lea Z. felt quatrain 5 referred to Mother Teresa; however, Clark P. has his own ideas about the meaning behind quatrain 5:

> "Charlene" was said to be a code for Charlemange, king of the Franks (768–814), king of the Lombards (774–814), and emperor (800–814). The line "*Princess Charlene in Italy*" refers to Charlemange's conquering the Lombard kingdom in Italy. The "*trinity of peppers*" refers to Charlemange's father, Pepin III. The white dove is pope Leo III who crowned Charlemange. The "hat" is the crown.

Laura T. writes regarding quatrain 5:

> The third line, "*The white dove is a bee*" refers to Bernard of Clairvaux, who, along with Ambrose, used bee and beehive imagery when referring to the Church and faith. Bernard actually said that the "bee" was the Holy Spirit, which of course would be the "white dove." Line 2, "*With a trinity of peppers,*" may refer to the Jews, Muslims, and Christians of Jerusalem. There was some friction between the groups, and a "pepper" can certainly be an irritant. Bernard was a major factor behind the Second Crusade (1146–1148). As to the fourth line, "*A hat does not hurt lepers,*" a "hat" can symbolize power and religious orders. "Hat" may be a reference to Pope Eugenius III, who approved of Bernard's Crusade. Lepers lose their limbs and are sequestered from society; similarly, the men who enter a monastery cast off items and are part of an enclosed society. Bernard was a leader of the Knights Templar, and so the "hat," being the Pope, would not stand in the way of the efforts ("harm") of the "lepers," namely the Knights. The possible meaning of the first line, "*Princess Charlene in Italy,*" has eluded me (a royal female descendent of Charlemagne?). So, in a nutshell, I think quatrain 5 refers to the Second Crusade.

Could it be that Nostradamus's quatrains were like ink blots—not really foretelling anything but permitting people to fit future history to rather nebulous poems?

Lea Z. felt that quatrain 6 referred to Lady Diana Spencer. Dave G. comments about quatrain 6:

> Quatrain 6 refers to the demise of IBM at the hands of Microsoft. One definition of capuchin is of a South American monkey with the hair on its head in the form of a crown. This refers to the pointy haired managers of IBM going under water (sinking) in their business struggles. The holy music refers to the "Start Me Up" song by the Rolling Stones used in Microsoft's Windows 95 announcement. IBM has a headquarters in England. After the fight between IBM and Microsoft (the rain), there is nothing but IBM divisions reduced to starvation (bone), with the S/390 division (the long one) suffering the most.

Lea Z. said that quatrain 7 refers to John F. Kennedy, Jr. and his wife and also sister Caroline. Bill W. suggests that quatrain 7 refers to "Jesus and the resurrection." Other respondees also thought this referred to Jesus. Judi L. writes, "I believe quatrain 7 refers to Cleopatra and her associations with Caesar and Marc Antony."

Some people thought that quatrain 9 described World War III. Dave G. comments about quatrain 9:

> This quatrain indicates that Bill Gates ("*the dark head*") causes trouble for IBM (*the small king*). The reference to Asia refers to the offshore computer manufacturers, and how the cheap Asian computer clones have helped Microsoft dominate the software market. But, despite the good done by the clone makers, there

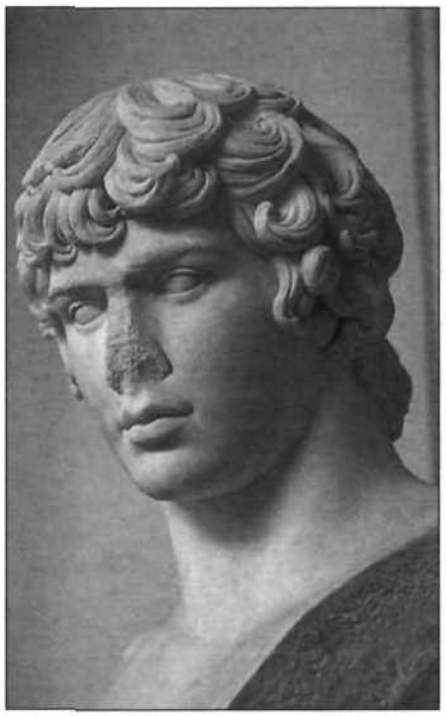
are enemies, such as the governments antitrust suit. The government is specifically referred to here as the "three" for the three branches of government, and also as the "ring" since the three parts are all interlocked. The "exiles" refer to non-Microsoft software developers, and J refers to the Justice department. However, despite the screaming, the Justice department does not cause problems for Microsoft, which continues to take over ("*do not shun*") the Internet ("the wires").

Bill W. suggests that quatrain 9 refers to the "axis powers of World War II."

Discussion

As you can see, many of the historical interpretations provided by respondents reflect our modern minds reacting to amorphous poetry. Nostradamus's prophecies tend to be general and unordered. This makes it difficult to say when a particular quatrain has missed or hits its mark. Judge for yourself. Many Web sites contain Nostradamus's prophecies, and there are a number of excellent books that delve into their possible meanings (or nonmeanings).

Many of the historical interpretations provided by respondents reflect our modern minds reacting to amorphous poetry. Nostradamus's prophecies tend to be general and unordered. This makes it difficult to say when a particular quatrain has missed or hits its mark.



Antinoüs, lover of Roman emperor Hadrian.

I've also randomly scrambled real Nostradamus quatrains in order to conduct future experiments to see if people can easily find "meaning" in them. Although I've done the scrambling by hand, I suggest future researchers write computer programs that randomly select lines from quatrains to make computer-generated "Nostradamemes" or "Nostradamlets."

It would be interesting to rigorously determine if the Nostradamus prophecies yielded more historical matches than the Antinoüs's prophecies. This would be difficult to assess because of the difficulty of assigning a correctness estimate to the unfalsifiable prophecies. One test would be to determine which prophecies elicited the most similar historical interpretations by different interpreters.

I look forward to additional interpretations that you might solicit from friends regarding the Antinoüs's prophecies. I'd like to create a big collection of possible meanings. In any case, anyone who thinks that Nostradamus truly predicted the future should realize that his focus on France made him miss some of the most Earth-shattering happenings in the centuries after his death, from the American civil war to Darwin's theory of evolution.

Incidentally, an "Antinoüs" really existed although only one of my respondents realized this. Antinoüs (110 B.C.–130 A.D.) was the homosexual lover of the Roman emperor Hadrian, and they traveled together on many journeys throughout the Mediterranean world. While the two were visiting Egypt, Antinoüs drowned in the Nile. Hadrian loved Antinoüs so much that when Antinoüs died, Hadrian deified him. Hadrian erected temples to him all over the empire and founded a city, named Antinoöpolis in his honor, near the place of his death. Many sculptures, gems, and coins survive depicting Antinoüs as a model of youthful beauty.

Finally, Linda Z. from Canada was perceptive in her analysis recognizing the possible identity of Antinoüs. She writes

> Many of the places and people mentioned in your "Antinoüs Quatrains" would have been inconceivable in the era of Hadrian and Antinoüs. Such anachronistic terms include "knight," "America," and "stegosauri." Even though the verses are supposed to be prophecy, they clearly are not couched in the language of Roman times. From this I surmise that you refer to a different Antinoüs, or that the "prophecies" are a more recent forgery. I sense the stench of computer-generated verse. I looked a little farther, and the only "Princess Charlene" I could find on the Web was a llama! I suspect I'm on the right track. Nevertheless, here are my interpretations. Quatrain 3 with the phrase "*the northern edge of America*" refers to Canadian geography. The second line is a reference to Newfoundland, which is always called "the rock." The child with the amber heart refers to salmon. The third line, "*the change is nearly as the fourth*" clearly refers to the issuance of a new Canadian quarter, depicting native art from British Columbia. The fourth line with "sea, land" clearly refers to the Great Lakes; the victory could be the War of 1812, and the cart is clearly the Canadian Mint's online shopping cart where coin collectors worldwide can purchase the aforementioned new quarters.

References

Pickover, Clifford A. 2001. *Dreaming the Future: The Fantastic Story of Prediction.* Amherst, New York: Prometheus Books.

Randi, James. 1993. *The Mask of Nostradamus.* Amherst, New York: Prometheus Books. □

Common Myths of Children's Behavior

A number of false beliefs about children's behavior are very common among parents and the lay public. This article summarizes scientific findings and applies critical thinking to show what's tripped up so many of us.

CATHERINE A. FIORELLO

No one considers parenting a pseudoscience, but many of the "truths" that parents believe are contradicted by scientific knowledge. Discussion of these myths can shed light on our knowledge of children's behavior. In addition, the discussion illustrates some basic scientific principles that can also be applied elsewhere.

1. "Don't give Sheldon that candy—sugar makes him so hyper!" Many parents and teachers report that childrens' consumption of sugar results in hyperactivity. But the empirical research is clear: consumption of sugar has no effect on children's behavior as rated by objective observers (Milich, Wolraich, and Lindgren 1986). So why are parents

and teachers convinced it has such devastating effects? They are not aware of the need to *control for covariates.* A covariate is another variable that is associated with the variable of interest, in this case sugar consumption, but that might not be as noticeable. What variables might be overlooked by parents and teachers in judging the effects of sugar? Well, think about the situations in which children eat a lot of sugar, like birthday parties and Halloween—these are situations that are likely to excite children.

There's another possible covariate, too. Children whose parents don't restrict sugar at all, letting their children eat whatever they want whenever they want it, are also more likely to let their children run wild in other ways. And parents who restrict sugar (it is bad for your teeth, after all) are also more likely to teach self-restraint and obedience. But we often see the child without seeing the parenting. So we see an association between the sugar and the behavior, instead of an association between parenting style and behavior.

2. "She's writing her letters backward—it must be dyslexia." Many parents and teachers become concerned when a child is reversing letters, afraid that this is a sign of dyslexia. But the empirical research indicates that the primary indicator of reading disabilities such as dyslexia is difficulty with auditory processing and phonemic awareness—breaking words down into their component sounds (Beitchman and Young 1997; Shaywitz 1996). Dyslexia isn't a visual disability at all, but an auditory one. Parents and teachers should be concerned about a child who can't generate rhyming words, not one who is reversing letters.

So why are people so concerned about reversals? They are not aware of the effect of *base rate* in interpreting behavior. The base rate is the percentage of the general population that has a given characteristic. In this case, all children start out making reversals. After all, letters and numbers are the only things that we draw where the direction the figure is facing makes a difference in its name. (A dog facing right instead of left is still a dog; a 'd' facing right instead of left is now a 'b'.) Children gradually learn which way the letters face and by second or third grade they are no longer making reversals. The same percentage of children make reversals, whether they are having difficulty with reading or not (Black 1973; Pemberton et al. 1993), although children with reading disabilities may keep it up a little longer. But people only notice with the kids who are having trouble—and never compare it to the base rate.

3. "Tanisha is just immature. If we have her repeat first grade, she'll do better in school." Many parents and teachers are convinced that some children are too young or too immature for their grade placement, and that retention will help them catch up. But the empirical research indicates the opposite—retention not only has no long-term benefits, it can actually harm children emotionally (Jimerson, et al. 1997). In fact, children rate retention as the third most horrible thing they can imagine happening to them—after losing a parent and going blind (Yamamoto, et al. 1987). So why are parents and teachers convinced that it is helpful? Lack of long-term followup and lack of a control group. In most cases, a teacher judges the outcome of retention the next year, when the child is actually repeating the same grade. At that point, the child may be doing well academically. But the following year, when the child starts to fall behind again, the teacher isn't following up any more. And the parent says, "Well, the retention helped for a while, but now we need to try something else." And without a comparison to children who weren't retained, it's hard to see the benefits of promotion—and the costs of retention.

4. "Praise doesn't work. After I compliment John, his performance goes downhill. It's yelling whenever he messes up that really gets results!" Many parents and teachers are convinced that punishment

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is more effective in changing behavior than praise. But the empirical research indicates that positive reinforcement is more effective than punishment in changing behavior and especially in teaching new skills (Alberto and Troutman 1999). So why are parents and teachers convinced that punishment is better? They aren't familiar with the statistical concept of *regression to the mean*. When you are first learning something, there is a large element of random chance in how good your performance will be. Statistically, this random variation causes an interesting effect. After a particularly good performance, the chances are the next one will be worse, no matter what happens. And after a particularly bad one, the chances are the next one will be better, no matter what happens. So it looks like the praise caused your performance to deteriorate, and the yelling caused you to do better. But really, it was just random variation bringing you closer to the average. (For more on the regression effect, see "Superstition and the Regression Effect," by Kruger, Savitsky, and Gilovich, SI 23[2] March/April 1999.)

5. "I was spanked as a kid and I turned out okay." Many parents and teachers are convinced that occasional spanking is necessary, or at least not harmful. But the empirical research indicates that, while most children who are spanked do turn out all right, children who are not spanked do better, and for a significant minority of children, spanking is harmful and abusive (Hyman 1990; Straus, Sugarman, and Giles-Sims 1997). So why are parents and teachers convinced? They aren't aware of the necessity of an appropriate comparison group. They look at their own experience without considering, "what would I have been like if I hadn't been spanked as a child?" Of course, children can't be exactly equated. But when you randomly select large groups of children, you can compare the groups and draw some conclusions. As a group, children who are never spanked are in better shape psychologically—they are less likely to be aggressive or depressed later in life. There is even some evidence that they may be smarter (Straus and Paschall undated). Of course, we don't know if parents who spank are different in other ways from parents who don't—they might reason verbally with their children instead of spanking, or be more educated overall. The only way to directly test the effects of just spanking would be to randomly assign children to be spanked—and we couldn't ethically do that.

6. "Attention Deficit Hyperactivity Disorder doesn't really exist. After all, we're all fidgety and inattentive sometimes." Many parents and teachers are convinced that ADHD isn't a "real" disorder, but an excuse for bad behavior or poor parenting, or just a way to label normal kids as having a problem. ADHD may, indeed, be overdiagnosed in this country. But the empirical research indicates that 3 to 5 percent of children have such severe symptoms that it affects their functioning in almost every area, including school performance, making friends, and getting along in the family and community (Barkley 1998).

So why are parents and teachers convinced? They're not familiar with the process of diagnosis and the importance of norms. Parents and teachers may have read an article or heard a speaker that presented a list of symptoms, including items such as that the child "often does not seem to listen when spoken to directly" and "often fidgets with hands or feet or squirms in seat." The part that seldom gets presented, though, is the fact that diagnosticians must determine that the symptoms "have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level" and cause "clinically significant impairment" in functioning (American Psychiatric Association 1994). In other words, we are not diagnosing children who are normally fidgety; we are comparing children to others of the same age and gender and diagnosing those who have very extreme symptoms (often the most extreme 2 percent). We only diagnose children whose functioning (usually in school, with peers, and at home) is significantly impaired by their inattention, impulsivity, and hyperactivity. And in addition we rule out other causes of the symptoms—such as reactions to grief, trauma, or abuse; hearing difficulties; or physical illness.

7. "We're in the middle of an ADHD epidemic! Ten to twenty percent of all children should be on Ritalin!" This myth is the converse of the above. Because there is no objective test for ADHD, actually diagnosing it can be tricky. Many pediatricians diagnose ADHD based on a short office visit and good response to a trial of Ritalin (Copeland, et al. 1987). This process overlooks many common problems that can mimic ADHD, including depression, anxiety, medication side effects, abuse, lead

COMMON MYTHS OF CHILDREN'S BEHAVIOR
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Bertrand Russell and the Ideal of Critical Receptiveness

Russell's rational and moderate skepticism entails an ideal of inquiry based on critical receptiveness which views the acquisition of knowledge as difficult but not impossible.

WILLIAM HARE

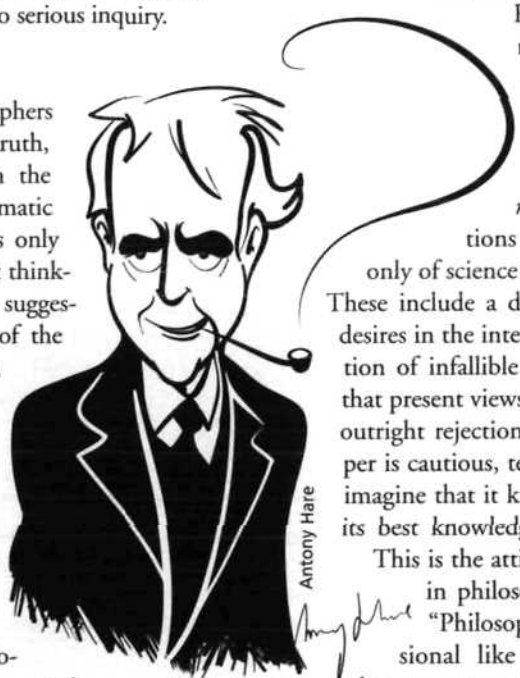
Bertrand Russell (1872–1970) enjoys a well-deserved place among the outstanding skeptics of the twentieth century.[1] His work not only sets a powerful example of skepticism in practice, but also helps to clarify the nature and value of skepticism. Russell explicitly rejects what he calls a lazy skepticism and dogmatic doubt, where all inquiry is regarded as pointless and doomed to failure, arguing instead for a constructive skepticism which seeks approximate truth even though certainty is unattainable. He is anxious that his own position be seen as a form of rational doubt, which requires that beliefs be held with the degree of conviction warranted by the evidence. Tentative truth replaces cocksure certainty.

Russell identifies two dispositions at the heart of the inquiring spirit, dispositions that to some extent tend in different directions but which need to co-exist in a dynamic tension and delicate equilibrium if either one is to serve its purpose in promoting the pursuit of truth. He strongly endorses a welcoming attitude toward new and controversial ideas, albeit infused with a definite reluctance and disinclination to give full assent to any idea before it has passed careful scrutiny. This is the complex, almost paradoxical, stance of critical receptiveness.[2]

Achieving an appropriate balance here is by no means easy, and we are always in danger of veering away from the ideal situation where these twin dispositions complement and support each other to a situation in which one begins to displace the other with unfortunate consequences. In harmony, however, they constitute an outlook that is fundamental to serious inquiry.

The Spirit of Inquiry

It is sometimes maintained that philosophers have traditionally regarded ideals such as truth, rationality, and impartiality, especially in the context of science, as relatively unproblematic notions; and that this simplistic view has only recently been discredited by postmodernist thinking (Keller 1995, 11). Contrary to these suggestions, however, contemporary awareness of the deeply problematic nature of such ideas, and of related intellectual virtues such as open-mindedness and love of truth, is greatly indebted to philosophers of an earlier generation, such as Russell, who were under no illusions about the complexities in such ideals and who helped to reveal the dubiousness of naive confidence in them. Unlike many critics today, however, Russell sees clearly that truth, rationality, and impartiality—suitably qualified—remain centrally important in science, education, and elsewhere.[3] We find in his work a valuable account and defense of those intellectual virtues that sustain and promote Enlightenment ideals,[4] and are central to any serious understanding of what it means to be an educated person.



Russell sets out to expose simplistic and overly optimistic views about the attainability of truth and rationality and he demonstrates effectively the need for caution. He points out that we can never be sure that our scientific laws are quite right, citing Einstein's advance on Newton as a prime illustration of this point. He shows too that an immense amount of theory is implicated in what is thought of as pure observation, which means that the concept of evidence is inherently problematic. For Russell, a central task of philosophy is to show that what passes for knowledge is very often defective, and consequently he suggests that the demand for certainty is an intellectual vice. He frankly admits that no one can view the world with complete impartiality and advocates that philosophy should promote "a realization of human fallibility" (Russell 1956, 167).

Despite such limitations and qualifications, however, Russell remains adamant that ideals such as truth, impartiality, and rationality (and corresponding intellectual virtues such as the wish to find out and a readiness to admit new evidence) remain indispensable to serious inquiry. He consistently champions truth as an ideal toward which we can approximate even if we always fall short of complete certainty (Russell 1985, 149); and he maintains that it is possible to make a continual approach toward impartiality. For Russell, truth and rationality, considered as ideals, remain unaffected by what were, and are, widely regarded as fatal defects (Russell 1985, 36). If such ideals are to be more than empty words, however, a certain outlook and temper of mind is necessary; his conception of the critically receptive outlook represents an attempt to capture something quite central to the spirit of inquiry.

Russell looks first to science to intimate an appropriate standard for inquiry of any kind, and he regularly employs phrases such as the *scientific outlook*,[5] the *scientific temper*, and a *scientific habit of mind* to convey a range of dispositions and attitudes characteristic not only of science but of all inquiry in an ideal form.[6] These include a determination to suppress all other desires in the interests of a desire to know, a repudiation of infallible dogma, and a readiness to admit that present views are sure to require modification or outright rejection. For Russell, "The scientific temper is cautious, tentative, and piecemeal; it does not imagine that it knows the whole truth, or even that its best knowledge is true" (Russell 1961a, 245).[7] This is the attitude Russell hoped to see reflected in philosophy, and in all forms of inquiry: "Philosophy should be piecemeal and provisional like science; final truth belongs to heaven, not to this world" (Russell 1927, 3).

This scientific spirit encapsulates an ideal for inquiry of every kind, and Russell identifies certain key intellectual traits that characterize an individual genuinely committed to inquiry, in particular (a) a strong desire to know, and (b) great caution in believing that one knows (Russell 1927, 3).[8] The tension between these traits is palpable. A definite readiness to welcome and accept new ideas in the interests of acquiring knowledge is moderated, balanced, and held in check by a disposition to subject such new ideas to careful assessment before they are accepted. Conversely, excessive caution in accepting ideas is tempered by a great desire to add to one's store of knowledge. Critical receptiveness keeps alive the desire to increase one's knowledge while ensuring that the beliefs we eventually come to accept have passed scrutiny.

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Russell thinks of science as the field where our greatest hopes for something close to genuine knowledge obtain, but even here an appropriate measure of doubt and tentative acceptance make clear the guarded nature of our beliefs; every scientific conclusion, says Russell, is capable of revision in the light of new evidence. At the same time, a strong desire to acquire further knowledge serves to mitigate any tendency to be merely dismissive and contemptuous of new and controversial ideas, and encourages a willingness to look seriously at what can be said for them; and the absence of good evidence at the moment does not preclude entertaining the idea that such propositions might possibly be true. In the case of claims concerning extrasensory perception, for example, Russell repudiates the prejudice many scientists display, and insists that we be "guided solely by the evidence in coming to a conclusion" (see Slater 1997, 439).[9]

A person possessed of an inquiring spirit will, in Russell's words, love to know, and hate to be in error, in equal measure (Russell 1950, 46). Hating error suggests the need to cultivate the habit of weighing evidence as well as the various skills and abilities that complement that disposition. When Russell brings to mind how people have often been misled by vicious propaganda, he occasionally goes so far as to say that if, in exposing such bias, education were to foster cynical skepticism in children, at least that may make them immune to such propaganda in the future. It is more accurate, however, to think of his general position as one supporting critical reflection rather than cynicism or extreme skepticism (see Slater 1997, 434).[10] Merely negative criticism and cynicism are transformed into constructive doubt if curiosity and receptivity to knowledge are encouraged.

Receptiveness and a love of knowledge entail an openness to ideas especially when those ideas potentially challenge beliefs we already hold. Genuine openness, as Neil Cooper puts it, involves "a readiness to connect the new with the old and to restructure, if necessary, the whole web of our belief" (Cooper 1994, 464).[11] It is considerably more than a merely polite and superficial willingness to tolerate an opposing or novel point of view, behavior that may very well lack what Russell calls "any inward readiness to give weight to the other side" (Russell 1971, 106). True receptiveness thrives on what Russell calls "the love of mental adventure, the sense of worlds to conquer by enterprise and boldness in thought" (Russell 1971, 108). It also involves an openness to people that recognizes we have much to learn from others, not only from recognized experts, and it suggests a willingness to listen in an open-minded spirit. As Russell puts it in one of his striking images, a person should not become a kind of hedgehog, "all bristles to keep the world at a distance" (Russell 1973a, 45).

Receptiveness is not to be thought of as a disposition to remain undecided, if such a general disposition were even possible, since openness to evidence will naturally lead to the formation of beliefs.[12] Suspended judgment is certainly appropriate at times, especially when the experts are agreed that there is no adequate basis for a definite opinion, but Russell also points out that it is necessary to learn to act upon the best hypothesis without dogmatically believing it. A sincere willingness to consider whatever may be said subsequently against one's beliefs is indicative of one's ongoing receptiveness despite the fact that tentative beliefs have been adopted. Nor does receptiveness demand a precipitate abandonment of presently held beliefs, in favor of a new view, at the first hint of possible counter-evidence; what is required instead is a genuine inner commitment to consider the merits of the newly emerging evidence.[13]

Being receptive to ideas without appropriate critical assessment leads to credulity, and the increasing ease with which misinformation can be spread leads Russell to view credulity as a greater evil than ever before. If completely unrestrained, receptiveness drifts inexorably in this direction, culminating in a willingness to accept an idea as true although no good reason is offered for it.[14] Any such tendency needs to be offset by encouraging the development of a critical habit of mind (Russell 1973a, 156).[15] Equally, however, a critical outlook devoid of any inward readiness to take new and contrary ideas seriously leads to incredulity, which effectively puts a halt to learning and inquiry and merely reinforces complacent dogmatism. Russell pinpoints the dilemma precisely in his observation that "it is not only that [people] are credulous where they should be sceptical; it is just as much that they are incredulous where they should be receptive" (Russell 1973a, 41). The challenge is to find the balance.

Openness to new ideas, then, must be accompanied by a critical assessment of those ideas if a person is to avoid becoming, in Paulo Freire's words, "an 'empty' mind passively open to the reception of deposits of reality from the world outside" (Freire 1993, 56). Such critical thinking involves a number of dispositions. It requires taking a close look at our beliefs, and at claims to knowledge advanced by others, in order to judge to what extent they are supported by reason and evidence, which Russell sometimes calls the habit of attempting to see things truly. In addition, critical thinking involves trying to turn the spotlight on assumptions, preconceptions, and those aspects of experience that are all around us but unnoticed.[16] It encompasses finding ways of resisting attempts by others to impose their ideas and deprive us of the ability to think for ourselves; here we can think of Russell's tireless condemnation of propaganda. In these various ways, an individual tries to employ critical judgment without compromising that receptiveness to ideas which prevents criticism from hardening into closed-mindedness. The need for the twin aspects of critical receptiveness is captured perfectly in Russell's reminder that "submission to truth is as important as refusal to submit to the judgment of others" (see Rempel 1995, 421).

Critical receptiveness involves assessing the merits of ideas by looking carefully but sympathetically at the reasons and evidence both in favor and against. Such sympathy can prevent criticism from degenerating into knee-jerk skepticism, which is destructive and ultimately cynical, where incredulity ultimately triumphs over receptiveness.[17] Russell suggests, for example, that it may be appropriate to put one's critical evaluation on hold temporarily to ensure that a fair hearing is given; he favors "a kind of hypothetical sympathy, until it is possible to know what it feels like to believe in [the] theories, and only then a revival of the critical attitude" (Russell, 1961b, 58).[18] That ultimate demand for evidence does not itself put one's

receptiveness in question; it is indeed an important aspect of being receptive, in this case to the possibility that evidence may indeed be at hand to support a view which at first seems incredible or to overturn a view one presently holds. Much depends, of course, on the spirit in which the demand is made; sometimes it can indeed seem suspiciously as if nothing will ever count as sufficient evidence. In such cases, the demand merely disguises the fact that our minds are closed.

Russell's account helps us to appreciate that it is a difficult matter of judgment to find the appropriate balance between receptiveness and criticism in practice, and also to recognize when we and others are giving each of these dispositions their due. The matter is further complicated by the fact that our sense of where the balance is at present shifts from one context, and one community, to another. If we think in terms of the general public and the influence of the media, we may conclude that a healthy dose of reflective skepticism is just what is required to counteract what Richard Dawkins calls "the current epidemic of paranormal propaganda."[19] Other contemporary scientists, however, thinking primarily of the attitudes of practicing scientists, believe that the scales are skewed very much in favor of negative criticism when it comes to unorthodox views or extraordinary claims that appear to threaten well-established scientific beliefs, and they argue for a greater degree of receptivity. Brian Josephson, for example, argues that the claims of "heretical scientists" are dismissed as "nonsense or impossible, generally without any serious attempt to look at the evidence" (Josephson, 1994).[20] The essence of his objection is not that the unorthodox claims he mentions are actually credible, but that their merits have not been seriously assessed in a genuine scientific inquiry. Josephson is himself somewhat skeptical, but he refuses to say a priori that something *cannot* be the case. He fears that various "defense mechanisms" spring into action to defend the "purity" of science, and that claim, if true, would clearly undermine the kind of receptiveness that calls for an impartial assessment of an unorthodox claim in the light of evidence.[21]

A fine contemporary statement embodying the attitude involved in critical receptiveness and acknowledging the problem of satisfying both dimensions is found in the writings of the late Carl Sagan. Sagan warned against the danger of skeptical criticism degenerating into a debunking of everything new and different: ". . . what is called for is an exquisite balance between two conflicting needs: the most skeptical scrutiny of all hypotheses that are served up to us and at the same time a great openness to new ideas. . . . But if you are able to exercise only one of these modes, which ever one it is, you're in deep trouble" (Sagan 1987, 41–2). Sagan thought of these needs as involving a seemingly self-contradictory mix of attitudes, but somehow justice had to be done to both aspects. Such conflicting demands seem likely to call for a "tolerance for ambiguity" in the individual if a finely tuned critical receptiveness is not to collapse into a one-sided emphasis on one aspect to the exclusion of the other. Sagan's perceptive comments offer some encouragement that Russell's insights have filtered through to our own day to help illuminate the complex nature of the inquiring spirit and skeptical outlook.

References

Alter, Robert. 1998. A readiness to be surprised. *Times Literary Supplement.* January 23: 15–16.

Cooper, Neil. 1994. The intellectual virtues. *Philosophy* 69: 459–69.

Dawkins, Richard. 1998. Science, delusion, and the appetite for wonder. SKEPTICAL INQUIRER 22(2): 28–33, 58.

Feigl, Herbert. 1976. The outlook of scientific humanism. In Freeman, Eugene (ed.). *The Abdication of Philosophy: Philosophy and the Public Good.* La Salle, Illinois: Open Court, pp. 73–79.

Freire, Paulo. 1993. *Pedagogy of the Oppressed.* New York: Continuum.

Gardner, Martin. 1997. Courtney Brown's 'cosmic voyage' into preposterism. SKEPTICAL INQUIRER 21(3): 14–5, 54.

Haack, Susan. 1998. *Manifesto of a Passionate Moderate.* Chicago: University of Chicago Press.

Hare, William. 1985. *In Defence of Open-mindedness.* Montreal: McGill-Queen's.

———. 1999. Bertrand Russell on critical thinking. *Proceedings of the Twentieth World Congress of Philosophy.* Available at http://www.bu.edu/wcp/Papers/Educ/EducHare.htm. Also published in *Journal of Thought* 36, 1, 2001: 7–16.

Hartshorne, Charles, Paul Weiss, and Arthur Burks (eds.). 1931–58. *Collected Papers of Charles Sanders Peirce.* Cambridge: Harvard University Press.

Josephson, Brian. 1994. Stand up for rocket man v. armchair critic. *Times Higher Educational Supplement* August 12: 10–11.

Keller, Evelyn Fox. 1995. Science and its critics. *Academe* 81(5): 10–15.

Mitchell, Basil. 1976. Reason and commitment in the academic vocation. *Oxford Review of Education* 2(2): 101–9.

Passmore, John. 1994. Reply to my critics. *Journal of Aesthetic Education* 28(1): 46–53.

Rempel, Richard A. (ed.). 1995. *Collected Papers of Bertrand Russell Vol. 14.* London: Routledge.

Russell, Bertrand. 1927. *Philosophy.* New York: W. W. Norton.

——— 1950. *Unpopular Essays.* London: George Allen and Unwin.

———. 1956. *Portraits From Memory.* London: George Allen and Unwin.

———. [1935] 1961a. *Religion and Science.* New York: Oxford University Press.

———. [1946] 1961b. *History of Western Philosophy.* London: George Allen and Unwin.

———. [1916] 1971. *Principles of Social Reconstruction.* London: Unwin.

———. [1926] 1973a. *On Education.* London: Unwin.

———. [1912] 1973b. *The Problems of Philosophy.* London: Oxford University Press.

———. [1928] 1985. *Sceptical Essays.* London: Unwin.

Sagan, Carl. 1987. The burden of skepticism. SKEPTICAL INQUIRER 12(1): 38–46.

Scheffler, Israel. 1967. *Science and Subjectivity.* Indianapolis: Bobbs-Merrill.

Slater, John G. (ed.). 1997. *Collected Papers of Bertrand Russell Vol. 11.* London: Routledge.

Notes

1. SEE SKEPTICAL INQUIRER 24(6): 23–28 November/December 2000.

2. Russell actually speaks of critical undogmatic receptiveness (Russell 1985, 117). I believe that "critical receptiveness" captures everything essential to the idea; if the attitude is critical, it cannot be dogmatic.

3. Russell's views are foreshadowed in the writings of Charles S. Peirce (1839–1914), who observed that science is "infested with over-confident assertion" (1.137). Peirce acknowledged that reason can never hope to attain "absolute certainty" (1.141), proclaiming the fallibilist principle that "we can never be absolutely sure of anything" (1.141). Nevertheless, Peirce retained a deep conviction that it was vital to be "seized with a great desire to learn the truth" (1.235), and insisted that genuine inquiry is undertaken "regardless of what the color of that truth may be" (7.605). References are to volume and paragraph in the *Collected Papers of Charles Sanders Peirce* (Hartshorne, Weiss, and Burks eds. 1931–58). (Cited in subsequent notes as Peirce, *Collected Papers.*) I am primarily indebted to Susan Haack for her rich and illuminating account of Peirce's remarks on intellectual virtue (Haack 1998).

4. This is not to say that open-mindedness and critical thinking will *guarantee* that truth or objectivity will be achieved, nor that they are *invariably* desirable, but that there is a *presumption* in favor of these traits for anyone who takes the pursuit of truth seriously (Hare 1985, 4).

5. Russell remarks elsewhere that the scientific outlook is the intellectual counterpart of what is, in the practical sphere, the outlook of liberalism (Russell 1950, 28).

6. Here again, there is an interesting parallel with Peirce, who had spoken of the scientific spirit (*Collected Papers* 1.34, 1.55, 1.148), by which he meant to

convey an attitude of mind that takes seriously a commitment to the pursuit of truth, a determination to root out error, and a readiness to discard faulty views.

7. "Best knowledge" here must be interpreted along such lines as that which appears to be most securely established as knowledge, to preserve the conceptual link between knowledge and truth.

8. Peirce, in a remarkably similar way, had proposed two qualifications for the true scientist: (a) having as the dominant passion in one's soul a determination to find out the truth in some area, whatever the color of that truth may be; (b) a talent for severely critical thought. Peirce, *Collected Papers* 7.605.

9. Russell made this comment in 1953, and it is possible that his assessment would differ today in view of further experimentation since that time. For example, he also considered the claims of astrology in the same context, and in that case his verdict was that there was so much evidence against astrology that it would be a waste of research funds to look further into the matter. At the same time, however, he conceded that if a private researcher were able to establish a prima facie case in favor of astrology, then the true scientific outlook would require that a fresh examination of the evidence be undertaken.

10. When Russell defends the value of skepticism, he makes it clear that he rejects extreme forms of skepticism and defends a more moderate, rational form (Russell 1985, 11).

11. For an excellent discussion of critical receptiveness in the context of literary studies, see Alter (1998).

12. By contrast, as Herbert Feigl reminds us, the mind of the extreme skeptic is "open at both ends"—everything floats through and nothing sticks (Feigl 1976, 74).

13. Neil Cooper (1994, 462) points out the virtue of intellectual pertinacity. And Basil Mitchell similarly commends a "principle of tenacity" which allows a belief to be persevered with long enough for its potentiality to be properly explored (Mitchell 1976, 107).

14. Scheffler's reminder that acceptance can also mean simply taking an idea seriously enough to look into it further is very useful in reconnecting receptiveness with criticism: ". . . the tentative acceptance of a relatively unsupported hypothesis is compatible with acknowledgement of controlling tests to which future experience will subject it" (Scheffler 1967, 86).

15. For an account of Russell's views on critical thinking, see Hare (1999).

16. To enable us, in Peirce's words, "to perceive what stares us in the face with a glare that, once noticed, becomes almost oppressive with its insistency" (1.134). Russell (1973b, 91) speaks of going through life "imprisoned in the prejudices derived from common sense."

17. Peirce also makes the point that a scientist will, for the time being, entertain and respect a hypothesis which is "wildly incredible," though in due course it will be "cleared away" if it fails to withstand scrutiny (1.120).

18. John Passmore (1994, 47) provides an interesting autobiographical example of the attitude Russell has in mind when he comments on his own reaction to generalizations about art: "My first reaction when I encounter such a generalization . . . is to welcome it with enthusiasm. It is a view I very much like. But then counterexamples pour into my mind. . . ."

19. Dawkins (1998) believes that an interest in the paranormal reflects the same sense of wonder and appetite for mystery that is so important in science, but that audiences are not encouraged to be critical and demand "a certain minimal standard of evidence." Peirce was sympathetic to the "wild play of the imagination" in science, but this did not prevent him from roundly condemning "rank charlatans" who try to establish foregone conclusions without regard to evidence (1.235).

20. Josephson shared the Nobel Prize in Physics in 1973.

21. No doubt Josephson would agree that, in the absence of anything in the way of serious evidence, as in the claim that some people possess the ability to remotely-view Earth three hundred years in the future, receptiveness to such claims, in the sense of according them any probability whatever, is indistinguishable from gullibility (see Gardner, 1997). Courtney Brown's bizarre claims alluded to here are set out in *Cosmic Voyage: A Scientific Discovery of Extraterrestrials Visiting Earth* New York: Dutton, 1996. □

COMMON MYTHS OF CHILDREN'S BEHAVIOR
from page 39

poisoning, hearing impairment, and more. True, ADHD isn't caused by bad parenting, but children from a chaotic home may never have learned to focus and pay attention. Making the diagnosis based on a good response to Ritalin can be especially dangerous, since some of the disorders that mimic ADHD can be made worse (including tic disorders and anxiety disorders).

In addition, since Ritalin is a stimulant, it can improve performance in *anyone* who takes it, and up to 30 percent of children properly diagnosed with ADHD do not have a positive response (Barkley 1998). The diagnosis of ADHD is as much a process of ruling everything else out as it is a process of identifying ADHD. We don't really know if there is a physical difference in the brain wiring or chemical makeup of a child with ADHD; we just rule out every other possible cause of the inattention, impulsivity, and hyperactivity. So if a child gets a diagnosis of ADHD from a professional who has only seen the child briefly, or if a physician suggests trying Ritalin "just to see if it works," or if a well-meaning teacher says that she "knows" a child has ADHD because she's seen it so many times, a parent should remain skeptical and request a comprehensive evaluation. And even if a full evaluation identifies a child as having ADHD, a rush to Ritalin isn't necessarily called for.

The benefits of scientific thinking are not limited to questions that *seem* scientific. Many aspects of parenting are intuitive, but an awareness of what science says about children's behavior can still be helpful. In addition, the principles of scientific thinking illustrated in these examples may be useful elsewhere in daily life. Remembering regression to the mean the next time you are teaching your spouse to drive a standard transmission car may save some wear and tear!

References

Alberto, Paul A., and Anne C. Troutman. 1999. Applied behavior analysis for teachers (5th ed.). Upper Saddle River, NJ: Prentice-Hall.

American Psychiatric Association. 1994. Diagnostic and statistical manual of mental disorders (4th ed.). Washington, D.C.

Barkley, Russell A. 1998. Attention-Deficit Hyperactivity Disorder: A handbook for diagnosis and treatment. New York, NY: Guilford Press.

Beitchman, Joseph H., and Arlene R. Young. 1997. Learning disorders with a special emphasis on reading disorders: A review of the past 10 years. *Journal of the Academy of Child and Adolescent Psychiatry* 36, no. 8 (August): 1020–32.

Black, F. William. 1973. Reversal and rotation errors by normal and retarded readers. *Perceptual and Motor Skills* 36, no. 3: 895–98, 3.

Copeland, L., et al. 1987. Pediatricians' reported practices in the assessment and treatment of attention deficit disorders. *Journal of Developmental and Behavioral Disorders* 8, no. 4: 191–97.

Hyman, Irwin. 1990. *Reading, Writing and the Hickory Stick.* Lexington, MA: Lexington Books.

Jimerson, Shane, et al. 1997. A prospective, longitudinal study of the correlates and consequences of early grade retention. *Journal of School Psychology* 35, no. 1: 3–25.

Milich, Richard, Mark L. Wolraich, and Scott Lindgren. 1986. Sugar and hyperactivity: A critical review of empirical findings. *Clinical Psychology Review* 6, no. 6: 493–513.

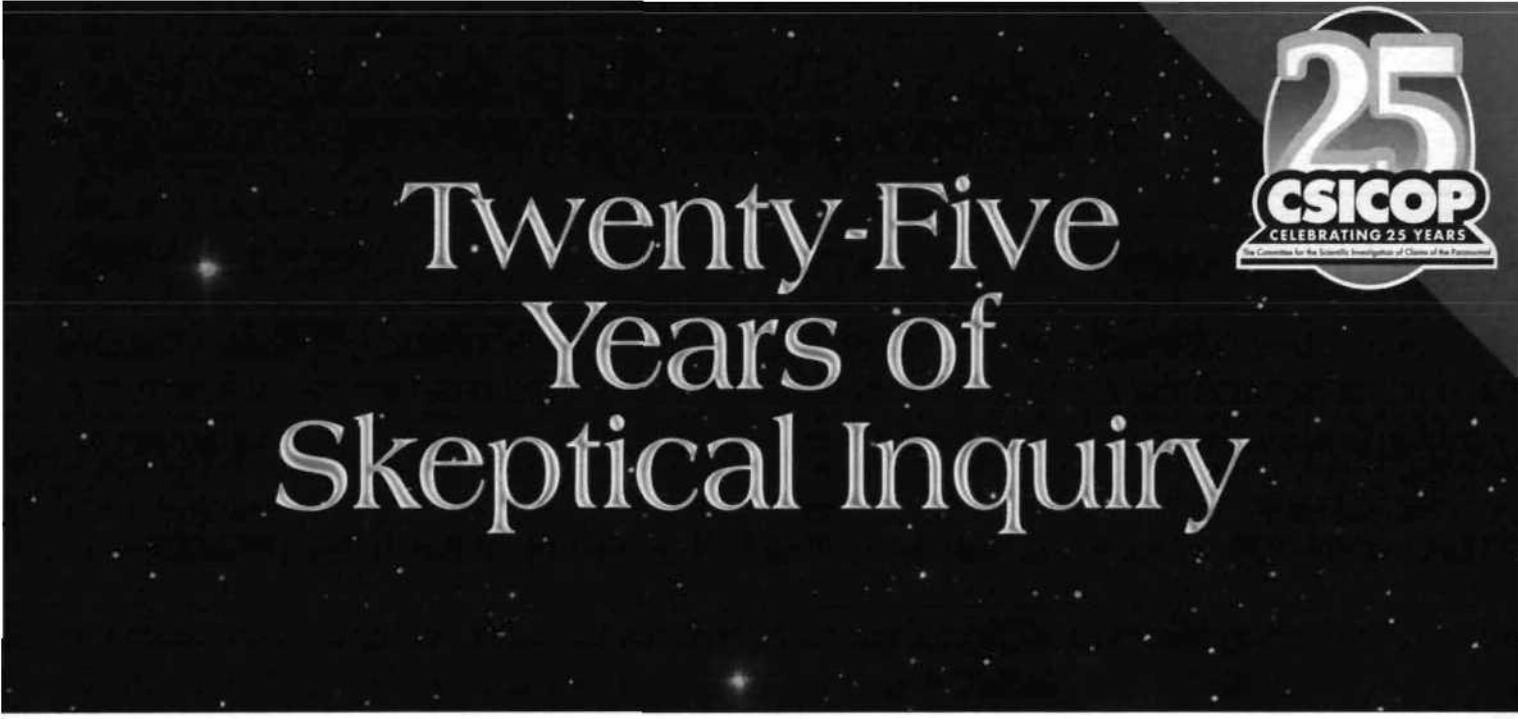
Pemberton, Elizabeth, et al. 1993. Letter reversals produced and recognized by dyslexic and nondyslexic children. Biennial Meeting of the Society for Research in Child Development. New Orleans, LA, March.

Shaywitz, Sally E. 1996. Dyslexia. *Scientific American* November, 98–104.

Straus, Murray A., and Mallie J. Paschall. Corporal punishment by mothers and child's cognitive development: A longitudinal study. www.unh.edu/frl/cp51japa.htm, undated.

Straus, Murray A., D. B. Sugarman, and J. Giles-Sims. 1997. Spanking by parents and subsequent antisocial behavior of children. *Archives of Pediatric and Adolescent Medicine* 151: 761–67.

Yamamoto, Kaoru, et al. 1987. Voices in unison: Stressful events in the lives of children in six countries. *Journal of Child Psychology and Psychiatry* 28, no. 6: 855–64. □



Twenty-Five Years of Skeptical Inquiry

This year marks the 25th anniversary of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) and the SKEPTICAL INQUIRER. *CSICOP was founded at a conference at SUNY-Buffalo, April 30–May 1, 1976. The first issue of the* SKEPTICAL INQUIRER *(initially called* The Zetetic*) came out that fall (Fall/Winter 1976). To mark these anniversaries, over the next several issues, in addition to our regular content, we plan to publish short twenty-fifth anniversary sections. The essays in these sections are by five persons close to CSICOP — four since day one. Each has an insider's view yet each offers a different, personal perspective. They are from the forthcoming book* Skeptical Odysseys *(Prometheus, 2001), a collection of original first-person accounts by the world's leading paranormal inquirers, edited by CSICOP founder Paul Kurtz in honor of CSICOP's twenty-fifth anniversary. We'll highlight some of Kurtz's reflections in a future section.*

From the Editor's Seat: 25 Years of Science and Skepticism

Kendrick Frazier

First of two parts

My introduction to the modern skeptical movement came in a letter dated April 15, 1976. I still have it. I was then editor of *Science News*, the weekly newsmagazine of science, in Washington. The letter said the upcoming annual conference of the American Humanist Association, April 30–May 2, in Buffalo "is attracting international attention and will surely produce ongoing interest and controversy."

Photo credit: Randy Montoya

Kendrick Frazier

I could not have known then how true that statement was. Nor how much my going there would change my professional life forever. For the next quarter century (and beyond, I hope), I would be happily caught up in a part of what—for lack of a better term—we might call the international skeptical movement. I prefer to call it scientific skepticism.

"Coincident with the Conference," the letter went on, "will be formal announcement of formation of a new international 'Committee to Scientifically Investigate Claims of Paranormal and Other Phenomena.' This committee is an outgrowth of 'Objections to Astrology,' which created worldwide attention when released in *The Humanist* magazine (Sept./Oct. 1975). The primary thrust of the Committee will be to '. . . examine openly, completely, objectively, and carefully . . .' questionable claims concerning the paranormal and related phenomena, and to publish results of such research. We earnestly invite your consideration to covering this important series of dialectic discussions."

The letter said all the conference's Saturday sessions will center on "The New Irrationalisms: Antiscience and Pseudoscience." It listed some of the participants and included a preprint of a formal announcement of the Committee and a copy of the "Objections to Astrology" statement, signed by 186 leading scientists, including eighteen Nobel laureates.

I was very familiar with that statement. The previous fall, we had published it verbatim, in small type, in *Science News* (108:166, Sept. 13, 1975), together with a short news article,

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"Science vs. astrology: New battle, old war." The statement had immediately generated wide discussion and debate. Said our article, "Unlike many public utterances by large groups of distinguished scientists, the attack on astrology pulls no punches. The statement says the belief that the stars can be used to foretell the future has 'no scientific foundation' and bluntly labels astrologers 'charlatans.'" We spoke at the time with Bart J. Bok, a past president of the American Astronomical Society and lead author of the statement. He told *Science News* he had become disturbed at the increasing interest in astrology among his freshman students at the University of Arizona and confusion between it and astronomy.

The statement had ignited immediate worldwide controversy. Our news article at the time concluded:

> Reaction has been mixed. Astrologers understandably were upset, claiming they had been misunderstood. A *Washington Star* editorial called the statement "the most futile verbal broadside of recent memory," but concluded, "we hope it made the scientists feel better." Bok says most of his mail has been favorable. Whether any minds have been changed remains to be seen. If astrology could survive persecution by the Medieval Church, it is likely to outlive another scholarly blast.

My years at *Science News* had made me interested in the flip side of science: pseudoscience. In more general terms I was interested in the widespread public interest in fringe-science ideas and the difficulties people have distinguishing what really is legitimate science, especially at its most speculative and fantastic, from equally speculative ideas not anchored in any kind of scientific knowledge or reality. All science editors get letters from readers with new theories of the universe, ideas for new inventions that seem to contradict the laws of physics, and full commentaries on any new speculative ideas reported in science. Some of these come from outright cranks and can be saved in the cranks file or tossed. But many others come from very intelligent people who have a lot of good ideas but don't quite know enough about how science works to connect them to real science, to research and write them up properly, and to get them tested and evaluated. In either case some evaluative function is needed.

The problem is compounded by whatever seems popular and faddish at the time. In response to readers' requests we had published three articles in *Science News* in the mid 1970s that tried to examine in a balanced way some popular claims of the time, one on Transcendental Meditation, one on Uri Geller, one on Kirlian photography. But we weren't able to do a very good job at them, I'm afraid. I got a letter from Martin Gardner, gently complaining and wondering if we had changed our policy of covering only genuine science. I knew who Martin Gardner was. A decade earlier a physicist friend had given me a copy of Gardner's *Fads and Fallacies in the Name of Science*, and I had devoured it, fascinated with his keen and amusing insights into the underworld of pseudoscientists and crank scientists. And of course he was famous as *Scientific American*'s Mathematical Games columnist. After getting his letter, I wrote back. I said we hadn't changed our policies, we were only trying to respond to readers' interests in finding out what science knew about the topics in question. But I told him that was difficult. Editors like me badly needed a central resource to go to—a group of scientists and other experts interested in these issues but who, like him, had a critical bent and could help us evaluate fringe claims.

I had traveled all over and even visited Antarctica and the South Pole. But nothing dealt with people's deepest interests and emotional passions and intellectual misperceptions as the topics— the new irrationalisms— these scholars and experts were examining.

The invitation from Buffalo seemed to announce that very thing.

I flew up to Buffalo and covered this founding conference of what became the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP). It was one of the most exhilarating times of my life. It was held on the then-brand-new Amherst campus of the State University of New York at Buffalo. It was there I first met and talked with Paul Kurtz (then a SUNY-Buffalo philosophy professor, editor of *The Humanist*, and co-chairman with Marcello Truzzi of the fledgling committee), James Randi, Philip J. Klass, L. Sprague de Camp, Ray Hyman, Truzzi, philosopher Ernest Nagel, Larry Kusche, and several dozen other prominent participants. At *Science News* I had covered scientific meetings of many scientific organizations—the American Association for the Advancement of Science, American Geophysical Union, Geological Society of America, American Meteorological Society, and others. I had traveled all over and even visited Antarctica and the South Pole. But nothing dealt with people's deepest interests and emotional passions and intellectual misperceptions as the topics— the new irrationalisms—these scholars and experts were examining. I recently wrote about this founding conference in some detail in my 8,000-word entry on "CSICOP" in the *Encyclopedia of the Paranormal* (Prometheus 1996), edited by the late Gordon Stein, so won't go into all the substance of it again here.

I went back to Washington and eventually wrote a three-and-a-third-page *Science News* cover article, "Science and the Parascience Cults," subtitled, "How can the public separate fact from myth in the flood of occultism and

pseudoscientific theories on the scene today? Help is on the way." We had an artist do a neat cover illustration of a knight on horseback spearing a multiheaded dragon. The dragon's heads had symbols for psychic-spoonbending, UFOs, astrology, and the Bermuda Triangle. The cover type was "Challenging Pseudoscience." It was published May 29, 1976.

Some of the conference participants familiar with the passions these topics raise had warned me to expect a strong reaction to whatever I published, but I was not prepared for what happened. We received more letters to the editor than about any previous *Science News* article in memory. Most of the writers commented thoughtfully about the issues of science and pseudoscience. But some were upset, and some considered the committee's effort an attempt by science to squelch mystery, imagination, intuition, and beauty (Paul Kurtz had effectively addressed that very issue at the conference). Two demanded their subscriptions be canceled.

Other national publications, including *The New York Times*, which published an excellent two-column article, also had been there and covered the conference.

So like the Objections to Astrology statement itself, the founding of CSICOP, although most of the scientific community was supportive, aroused controversy and debate, both thoughtful and heated, among the public and in the media. Much the same can be said about CSICOP's expanding activities ever since.

In August 1977, CSICOP held a news conference in New York City in conjunction with a meeting of its executive council, the first since the organizing conference. Here too a pattern was established. The committee called the NBC television network to task for credulous pseudodocumentaries on the Bermuda Triangle, Noah's Ark, and UFOs. It criticized the *Reader's Digest* for articles on parapsychology that, said the committee, presented as fact a number of assertions and anecdotes for which there was little or no documentation. *The New York Times* gave the session a full-column article, "Panel Fears Vogue for the Paranormal" (August 8, 1977). It noted that the committee was appealing to the media of mass communications to provide more balanced and objective treatment of such subjects. It quoted an NBC spokesman about the programs criticized: "They are done as entertainment, not as news. We're not presenting them as fact." (This was a response that would become familiar over the years.) The *Reader's Digest* could not be reached by the *Times* science reporter for comment, but later when I wrote an invited feature article for *Smithsonian* magazine on CSICOP and its battle against pseudoscience ("UFOs, horoscopes, Bigfoot, psychics, and other nonsense," March 1978), the *Reader's Digest* quickly reprinted it in condensed form in all worldwide editions (July 1978).

That August 1977 meeting had been pivotal for me as well. At it I was formally asked to become editor of CSICOP's journal, then called *The Zetetic* and subsequently renamed the SKEPTICAL INQUIRER, succeeding sociology professor Marcello Truzzi. In those first years it was published only twice a year, and I agreed. I have been editor ever since. We went quarterly with the first issue of volume 3, Fall 1978, and bimonthly (and to regular magazine format from the original digest size) with the January/February 1995 issue. Although the amount of material published annually and the workload have increased over the years, it has been a pleasure.

The SKEPTICAL INQUIRER draws upon those with knowledge, insight, and expertise on these issues whatever their formal backgrounds. It crosses disciplines, works both inside and outside of academia, draws upon investigative expertise wherever it may be found. It is a truly democratic, merit-based movement.

I feel it a great privilege to be editor all these years of what has become the central international journal of scientific skepticism—the worldwide effort to promote scientific inquiry and critical thinking, to evaluate paranormal and fringe-science claims of all sorts from a scientific viewpoint, and to serve as a forum for informed discussion of all relevant issues.

Psychologists, physicists, philosophers (the three leading disciplines represented), academics in all other areas of university life, science teachers, scientific or investigative journalists and communicators, and informed citizens from many walks of life concerned about all these issues together have formed a strong worldwide community. They may have a wide variety of backgrounds and diverse views and approaches, but this is where they find a common bond, and an outlet for publication and discussion. From the small core group of Executive Council members and founding fellows who helped create the original committee, this effort has expanded multifold and worldwide over and over. In fact, the SKEPTICAL INQUIRER draws upon those with knowledge, insight, and expertise on these issues whatever their formal backgrounds, affiliations, memberships, and nationalities. It crosses disciplines, brings the physical and human-based sciences together, works both inside and outside of academia, draws upon investigative expertise wherever it may be found, and addresses issues of passionate concern to the public and of significance to science, education, and public policy. It is a truly democratic, merit-based movement. Its core unifying values are a respect for the creative and evaluative methods of science, reason and rationality, critical thinking and judgment, and freedom of thought and inquiry, all applied to important issues that relate to scientific evidence or scientifically testable claims.

When CSICOP and the SKEPTICAL INQUIRER were founded 25 years ago here were four of the hot fringe-science topics that captivated public and media attention (in addition to the big-three perennials of psychics, UFOs, and astrology): Velikovsky, and his fantastic planetary-pinballs, worlds-in-collisions theories to try to explain catastrophic events in biblical times; Erich von Däniken, and his best-selling chariots-of-the-gods theories that ancient astronauts from other worlds had built many of Earth's ancient monuments; birthdate-based biorhythm theory; and the Bermuda Triangle. All these topics were touted in books that sold millions of copies. Notice something about all these latter issues. You don't hear much about them anymore. Is this a victory for reason and rationality? Did skepticism prevail? Not really.

Look at some of the hot topics of today: Several scholars in prominent academic positions claim that "intelligent design" instead of the creative processes of evolution is responsible for the intricacies of life. Therapeutic Touch, a hands-waving therapy invoking invisible human energy fields unknown to science, is widely taught in nursing schools. Magnetic forces are assumed to influence health and human performance, so now "magnet therapy" has become a big business. Nineteenth-century spiritualism has been revived in best-selling books and TV programs as modern-day mediums contend they can help you communicate with your long-dead loved ones. Unproven medical remedies, under the attractive-sounding rubric of alternative medicine, have gained a proclaimed public respectability unheard of since the days of snake-oil salesmen. Modern-day numerologists profess to find hidden codes in computer analyses of biblical texts. And we may only now be emerging from a decade-long orgy of accusations and recriminations based on the dubious idea that accurate "repressed memories" of childhood sexual abuse or other horrible past events can be revived through hypnosis and questionable kinds of therapy.

While the specific topics come and go, the more general manifestations of fringe-science, pseudoscience, and the paranormal persevere. They arise, over and over again, in new guise, with new language, new clothing, and new proponents.

And we still have the big-three: psychics, UFOs, and astrology. With UFOs, for instance, we went through a credulity explosion in the 1980s and early 1990s. Claims of people being abducted by aliens—the hidden memories usually obtained through hypnosis conducted by UFO-abduction proponents—gained widespread popular acceptance. And we simultaneously went through an incredible period in which a series of books by UFO proponents and frequent credulous television programs all proclaimed a government cover-up of a crashed flying saucer near Roswell, New Mexico, in July 1947. Some even claimed alien bodies had been found. These reports gained increasing visibility and credence in the media and public—becoming essentially a modern folk myth. That is, until the past few years when clear evidence was produced that the recovered Roswell debris was actually from a lost assemblage of balloons and instruments launched from Alamogordo, New Mexico, June 4, 1947. These New York University atmospheric sciences experiments were to develop constant-level balloons. These unclassified experiments were in turn part of a top secret project to detect round-the-world acoustic effects of future Soviet nuclear tests. Once these facts were disclosed and confirmed, the responsible media began to back off from the crashed-saucer claim. Nevertheless, the folk myth of a crashed saucer at Roswell will survive.

The point is that specific topics of pseudoscience, fringe-science, and the paranormal do come and go. This is especially the case with those having a strong, charismatic figure associated with them. As long as that larger-than-life personage (Velikovsky was one example, with his silver hair and Old Testament demeanor) is still around writing and promoting his cause, the issue stays alive. Once he or she is gone, it may noticeably diminish, leaving only lesser disciples fighting rear-guard actions for years to come to help keep the light alive. Other topics have their run in the press and among the public, until boredom sets in and some other fad belief emerges.

But while the specific topics come and go, the more general manifestations of fringe-science, pseudoscience, and the paranormal persevere. They arise, over and over again, in new guise, with new language, new clothing, and new proponents. And it is only rational for scientists and skeptics to realize that. Any hope scientists and skeptics may have to abolish from public consciousness nonsense and irrationalisms in the name of science is doomed to failure.

The positive appeal of such stories, the understandable human yearning for having the world the way we want it to be rather than the way it is, the lure of easy cure-all remedies, the appeal of comforting ideas, the search for significance and meaning, the desire for some all-powerful presence to guide our lives or reward good and keep the forces of evil at bay, the childlike attraction to New Age magical thinking, the quest for mystery and the "unknowable," the hope for everlasting life in some form—all these powerful psychological forces and human needs ensure that new manifestations of paranormal and fringe-science ideas will always have a welcome reception in people's hearts and minds.

Part 2 will appear in our next issue. □

Science Vs. Pseudoscience, Nonscience, and Nonsense

Twenty-Five Years of CSICOP

James Alcock

As the nineteenth century turned into the twentieth, men and women of science were confident that in the century to come, universal education and the growth of science would slowly but surely eradicate ignorance, superstition, and irrational belief. How could they have foreseen that a century later, despite burgeoning enrollments in universities and almost unbelievable advances in science and technology, society would be awash in mysticism, psychic detectives, Creation Science, therapeutic touch, homeopathy, chiropractic, channelling, UFOs, and remote viewing? Had these people a century ago been given a glimpse of the world to come, our world of today, what sense could they have made of it? Indeed, what sense can we make of it?

James Alcock

Despite the central importance of science and technology in modern society, the public does not cry out for the testing of homeopathic remedies; instead, our trusted pharmaceutical chains promote them alongside the products of scientific research. The public is not concerned that the nursing profession—long characterized by devoted caregivers who were trained in the methods of data-based medicine—is embracing therapeutic touch, which involves no touching at all, but instead the supposed manipulation of magical energy fields. The public does not react with skepticism to the notion that refrigerator magnets, despite their extremely short range, can lessen pain and even heal the body. The public does not rise to challenge claims that psychics can and have solved crimes that baffled the police. The public does not wince when one celebrity after another talks of the importance of astrology or psychic readers or out-of-body experiences in his or her life.

Whither science? The public cannot get enough of the ultimate products of science. We rush to stuff our snouts firmly in the trough of technology, expecting each new season to bring us quicker, better, more exciting technotoys. We want faster computers, more pervasive Internet links, sooner-rather-than-later cures for the ailments that plague us. And yet, rather than honoring science, the public is generally disdainful of both science and scientist, while welcoming to their bosom the purveyors of magic, shamanism,

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and supernaturalism. And yet science thrives. It thrives in a culture of its own, to a considerable degree isolated from modern popular culture, the culture in which most people live. It is often perceived as too difficult, too arcane, too removed, to be of interest to most modern people.

Whither parapsychology? How has parapsychology fared over the past twenty-five years? Ironically, this age of magical thought and paranormal belief has given very little more succor to parapsychology than it has to science. Formal parapsychology and science are both being pushed aside by an undiscerning public eager to embrace uncritically the next spiritual or paranormal fad, the next "feels great—must be good" belief system. It is important to make a distinction between formal parapsychology and the psychic nonsense and superstition that often operates in its name. While we may "tut tut" the parapsychologists for their unending quest to put belief in the paranormal on a scientific basis, we need to recognize that we and they have much in common—a shared belief that the scientific method, with its insistence on the careful testing of theory against experience, hypothesis against data, is the best path toward the true understanding of the world around us. We may differ in our assumptions about the underlying nature of reality, but we generally share a common desire to employ appropriate methods to put our ideas to the test.

While CSICOP members may be galled by the seemingly insatiable public appetite for psychic nonsense, it must be even more galling to parapsychologists, who have labored long and hard for recognition of their field, to be ignored by a gullible public that pursues a beeline to the purveyors of psychic pap.

What is the state of parapsychological research? Eight years after CSICOP's founding, I reviewed what had happened in parapsychology during that interval:

> Despite the enthusiasm for the new "quantum mechanical" theories, nothing of substance has occurred in parapsychology in the past eight years. The same old reasons for skepticism—the lack of public replicability, the problems of defining just what it is that "paranormal" signifies, the circular reasoning inherent in explaining departures from chance in terms of a "psi effect," the unfalsifiability that enters the picture whenever it is suggested that the experimenter's own characteristics or even his/her own psi or lack thereof may prevent him/her from ever observing psi, the failure of a century of research to improve the evidence—are as strong arguments against the psi position today as they were in the past. A new reason for skepticism is that, no matter how wild the hypothesis may seem, statistical evidence can be adduced that supports the claim; this suggests that artifacts rather than "psi" is the most probable explanation for the statistical deviations reported in parapsychological research.[1]

Sad as the situation must be for the parapsychologists, nothing has really changed in the intervening years that would lead me to revise this assessment. Parapsychology is no closer to its goal of establishing a scientific basis for paranormal phenomena than it was back then, or indeed, than it was even a century ago. Oh yes—there are recurrent claims that new research is finally demonstrating the reality of extrasensory perception or precognition or psychokinesis, but that is nothing new. Throughout its history, parapsychology has been characterized by "breakthroughs" that subsequently prove to be illusion, and fall into desuetude. Just as Rhine claimed in the 1930s and 1940s to have established the reality of ESP, so too at the time of CSICOP's birth, Targ and Puthoff were laying claim to having proven the psychic powers of Uri Geller, Charles Honorton was persuaded that his Ganzfeld studies had finally provided the replicable and sound empirical evidence that had so long been sought after, and Robert Jahn's extensive studies at Princeton University were supposedly on target to provide convincing evidence of the paranormal. A quarter century later, nothing has changed.

Wither parapsychology? Is parapsychology going to wither? Indeed, some well-known parapsychology laboratories have closed, and one might expect that the paucity of results yielded by parapsychological research might lead parapsychologists to give up, to abandon the field. While this has not happened on a large scale, in recent years, parapsychology has lost many of its senior scholars—to disillusionment in some cases, but more often to retirement, and to the shuffling off of this mortal coil. This is not unusual in any field, of course, and this is not to say that there are not still a number of bright, creative, and respectable scholars who are at the forefront—among others, people such as Adrian Parker in Sweden, Jessica Utts and John Palmer in the United States, and Robert Morris in Scotland—but the ranks are thinning. Moreover, parapsychology has not been blessed, in my view, with regard to replenishment of its key intellectual assets.There do not seem to be many young John Beloffs, or Susan Blackmores, or Charles Honortons or John Palmers or Robert Morrises or Adrian Parkers growing up in the ranks.

However, it is true that there are some signs of life in the field. For example: after more than three decades, the *International Journal of Parapsychology* will resume publication (by the Parapsychology Foundation). Some research laboratories—in particular that at the University of Edinburgh—are well established and active. Yet, to the outside observer, formal parapsychology appears moribund, although it is unlikely to die out any time soon. Its dedicated scholars seem no closer now than they were twenty-five years ago (or for that matter, a century ago) to establishing a scientific basis for their claimed phenomena.

Whither CSICOP? What have we accomplished and where are we going? Have we made a difference? Sometimes this question must give one pause, for surely the world is even more open to the paranormal and supernatural than it was when we began. CSICOP has in fact flourished as an institution. Having begun as little more than a shared idea, it now boasts a permanent headquarters with all the accoutrements, including an extensive library, as well as satellite offices in several cities. Moreover, CSICOP has spawned scores of like-minded organizations in many countries of the world. The SKEPTICAL INQUIRER continues to grow in popularity. Regional skeptic groups have been growing in number throughout North America and in other parts of the world.

Other skeptics organizations with their associated publications have also come into being—the James Randi Educational Foundation and the Skeptics Society being the most notable. CSICOP created an environment that encouraged the establishment of other such organizations.

What has CSICOP accomplished? The world is quite a different place than it was twenty-five years ago when it comes to information about the paranormal. At that time, it was very difficult to find sources of information that provided critical analysis of parapsychological/psychic claims. Given the burgeoning renewal of paranormal belief which began in the 1960s, even many people immersed in science had difficulty in gainsaying the claims of psychic researchers. CSICOP was founded because there was no voice in opposition to the overwhelmingly pro-paranormal informational deluge presented by the media. Things were so bad in terms of one-sided information that I can recall some individual scientists telling me of the need for physics to develop a theoretical accommodation for psychic abilities that had apparently been verified by parapsychologists! CSICOP and *The Zetetic*, which was to evolve into the SKEPTICAL INQUIRER, began to change all that. For the first time in history, there was a publication and an organization dedicated to critical examination of claims of the paranormal.

CSICOP has provided a powerful magnet for people who are interested in strange and bizarre phenomena. Before CSICOP, the only avenue to pursue, if one was interested in such phenomena, was that offered by parapsychology. When I was nine or ten years old, having been fascinated in reading about psychic phenomena, I decided that I wanted to grow up to be a parapsychologist—not surprising, since the only people who took any interest in actually researching such phenomena were parapsychologists. Now, when people are drawn to the paranormal, there is an abundance of information written from a skeptical perspective that can serve to satisfy their curiosity while at the same time promoting an interest in mainstream science. I daresay that some contemporary young researchers (I will not name names, but the astute reader may have an idea about to whom I refer) who approach the testing of paranormal claims from a skeptical starting point may well have become mainstream parapsychologists had not CSICOP begun to provide a source of critical information.

So, I do believe that CSICOP has made an indelible mark on the world—a modest mark, perhaps, but one that serves as a beacon to those who really want to understand the weird and wacky experiences that so many people report, without jumping to a supernatural/paranormal conclusion.

Happy twenty-fifth, CSICOP.

Thank you for the memories.

And of course, what is the twenty-fifth anniversary without party favors and reminiscences? You'll have to go to Barry Karr for any party favors that CSICOP may have to give away, but I can offer you some reminiscences. For those of us who have been fortunate enough to be at or near the CSICOP front lines, there are many, many memories. Here are a few of mine.

The joy of finding people who share your view. Before CSICOP was founded, I had already been involved in researching the growing belief in the paranormal. Such an interest was all but unheard of within psychology—the vast majority of psychologists took no interest in ESP and other such phenomena, for most simply did not believe that they existed. I sought the company of other researchers who might share my interest. Parapsychologists aside, there were very few of them. Reading the sparse critical literature on the subject of parapsychology brought me into correspondence with Professor Marcello Truzzi, a sociologist at Eastern Michigan University. It was a very positive experience to find someone who shared my fascination about the attraction that the paranormal has for so many people.

It was Professor Truzzi who invited me to a meeting at the University at Buffalo in 1976 that was to be held in conjunction with the annual meeting of the American Humanist Society. This meeting was to bring together a number of people who a shared a concern about the unbridled proliferation of belief in the paranormal, a proliferation fueled by one-sided media coverage. This event turned out to be the founding meeting of CSICOP. It was here that I first met the people who were to become the giants of CSICOP—Paul Kurtz, Ray Hyman, Phil Klass, James Randi, and my idol from my undergraduate days as a physics student, Martin Gardner. For someone like myself, who had felt—at least before coming into contact with Truzzi—quite isolated and alone with regard to my skeptical interest in the paranormal, it was a heady experience to meet so many powerful advocates of a viewpoint similar to my own.

Of course, Paul Kurtz provided the energy and foresight and determination that made CSICOP what it is today. One cannot help but be impressed by the man's ability to turn academic "wouldn't it be great" into reality. And almost as soon as I met him, I came to appreciate his almost legendary penchant for snap decisions—as I followed behind Kurtz and Truzzi and some others as they strode down a hallway, Paul turned to me and asked me where I was from. When I said "York University in Toronto," he replied, "Great, we need international representation—we'll make you a Fellow." And so a Fellow I became. Thus began my acquaintance with Paul Kurtz and with CSICOP.

From that first meeting in 1976, the Committee for the Scientific Investigation of Claims of the Paranormal emerged, its name a committee-produced appellation that has plagued us ever since. Worse, the name gave us the acronym CSICP, which was used officially for some time, but it was so hard to pronounce that the "O" of "of" was inserted to produce CSICOP. Unfortunately, this produced an unintentional homonym, "PSI-COP," and to this day, some of our opponents cannot be dissuaded from the belief that this was planned. Slowly, CSICP, or CSICOP, began its struggle to bring to the public a critical, science-based perspective on the paranormal. Through *The Zetetic*, edited by Marcello Truzzi, which became the SKEPTICAL INQUIRER, edited by Ken Frazier, CSICOP began to make its presence felt. And just as I had been overwhelmed to meet so many like-minded people at

that founding meeting, so too were many of the early readers thrilled to realize that they were not alone in trying to bring rationality to the discussion of the paranormal.

Rationalization in the defense of paranormal belief. At that same founding meeting, given my lifelong interest in conjuring, it was a thrill to watch a stage performance by James Randi. In those days, Uri Geller was in his heyday, and a good part of Randi's presentation was the duplication of Geller's tricks—showing that the same effects could be produced by conjuring, without revealing how. Surpassing my considerable appreciation of Randi's legerdemain was my astonishment at the intervention made by a professor from the University of Buffalo, who shouted at Randi after he had performed yet another Geller "miracle" and accused Randi of being a fraud. Randi shot back with "Yes indeed, I'm a trickster, I'm a cheat, I'm a charlatan, that's what I do for a living. Everything I've done here was by trickery." The interlocutor was not amused: he continued to shout at Randi, despite his wife's efforts to get him to sit down, and yelled, "That's not what I mean. You're a fraud because you're pretending to do these things through trickery, but you're actually using psychic powers and misleading us by not admitting it." This was my introduction to the powerful process of rationalization that traps even well-educated people who feel the need to defend a deeply held belief in the paranormal.

CSICOP was founded because there was no voice in opposition to the overwhelmingly pro-paranormal informational deluge presented by the media.

A trip to China. Our trip to China in 1988 was one of my personal CSICOP highlights, of course. Along with Kurtz, Randi, Frazier, Klass, and Karr, I had the privilege of participating in both a lecture tour of Beijing, Xian, and Shanghai, and in the testing of children who could supposedly read with their armpits and buttocks, as well in the testing of some Qi Gong masters. This trip has already been well documented,[2] but there are many stories that did not make it into the article. Some of the memories that come to mind that were not recorded in that account include: (1) Being in a shop with Randi, who showed a group of young children how to make a pencil wiggle so that it appears to be rubbery, and then the next day, while taking a stroll with him, hearing "Landi, Landi"—and turning to see a couple of children smiling as each held up a pencil, wiggling it just as Randi had shown them the day before. Ah, how fame spreads. (2) Talking, through a translator, with a psychologist who had not only observed the same psychic girls who we were going to test, but who had employed a hidden videocamera that revealed their cheating. When I asked, "In that case, why do you need us to test them?" he asked, "Have you ever slopped pigs?" He had spent four years on a pig farm during Mao's Cultural Revolution, and wasn't going to risk anything that might put him at odds with the powers that be, and thereby risk being sent back to the farm. Indeed, these girls were held in high esteem by some very high officials in China, including the head of the Atomic Energy commission, a renowned scientist, who opined that China had given four great gifts to the world—paper, gunpowder, the compass, and movable type—and now they had a fifth gift to give, these psychic girls. Denying their powers might merit being sent back to the farm. When we tested the girls in their hometown of Xian, they were brought to join us at a banquet that had been organized for us. Following the meal, we were all taken to something that was very surprising in 1988, a Xian discotheque. The scene that developed was almost surreal: Drinking beer in a discotheque in the midst of traditional Xian as these demure "psychic girls" transformed before our eyes into ordinary young adolescents, reveling in and dancing to the loud Western music, while their decorous chaperones watched with apparent disdain.

The power of personal experience. Since the history of CSICOP is inextricably tied to Paul Kurtz, those who wish to study and understand CSICOP need to some extent study and understand Kurtz. Although opponents have often viewed him otherwise, Paul Kurtz has not been rigid and close-minded about the paranormal. Indeed, in the early days of CSICOP, on more than one occasion he was heard to tell a radio interviewer that, while there is no evidence for the vast majority of paranormal claims, there was one exception—telepathy, and then he would relate how he and his wife often knew what each other was about to say, and that this might reflect ESP. Ray Hyman and I two or three times put on our psychology professor hats and explained to Paul how it is that normal psychological processes are likely, from time to time, to produce such experiences for all of us, without any involvement of ESP. Kurtz soon changed his expressed view, but this story is testimony both to the fact that he did not approach the paranormal with his mind rigidly made up *a priori*, and to the powerful impact of personal experience of seemingly paranormal events.

The power of experience that violates our worldview. One day, during a CSICOP conference held in London in 1985, most of the members of the Executive Council were at

lunch in a private dining room, and Randi was amusing us with some impromptu table magic. The waiter, a man with a heavy Portuguese accent, began to pay close attention to Randi's performance, and at one point remarked to Randi, "That is amazing." Randi beamed with pride at this commendation, and then the waiter added, "There's only one man I've ever seen do anything more impressive than that." Randi, who appeared slightly annoyed by this qualification of praise, asked, "And who might that be?" to which the waiter replied, "A Mr. Uri Geller, who stayed at this hotel last year." Oh boy! The gauntlet had been thrown down! Randi rolled up his sleeves, and magic enveloped us. Objects appeared from nowhere, minds were read, the hands of watches moved backward; the waiter was appropriately overwhelmed. However, that was not the end of the story. About an hour after lunch, I happened to pass through the lobby, when the hotel manager approached me and asked if I had been at the lunch where the magic was done. When I indicated that indeed I had been in attendance, he implored me to help him deal with one of his waiters. He led me to the kitchen, and there in a corner sat the Portuguese waiter, extremely distraught. The waiter told me that he had never seen such things happen, and that this must have involved tampering with spirits or even demons, and he was very, very frightened. Despite my training as a psychologist, I was unable to calm him down, or to dissuade him from his belief that he had witnessed supernatural dabblings. It was only when I began to praise Randi's virtues as a magician that he began to lighten up. But then, he wavered—he had seen magicians before, and magicians "can't do those things." Only when I heaped even more praise on Randi, telling him that Randi is no ordinary magician, but "one of the best magicians in the world," did he really start to soften. Finally, he said, "Well . . . maybe if he's one of the best magicians in the world, it could have just been trickery." He then calmed down, and the event was over. I had received a memorable lesson in the ability of inexplicable experience to produce powerful emotion.

Pockets of irrationality. Another incident comes to mind that relates to our ability to sustain pockets of irrationality amongst our beliefs, while all the while persuading ourselves that we are rational people. This occurred during a CSICOP meeting in Mexico City in 1989. Professor Mario Bunge had just delivered an address in which he surveyed the subject of irrationality, moving from belief in the paranormal to such topics as psychoanalysis, which he argued is also pseudoscientific in its nature. He was not aware that a substantial part of this university audience was made up of psychoanalysts. After the talk was over, I recall listening to a heated discussion in English at the back of the hall. Professor Bunge was surrounded by a number of psychoanalysts, all happy to applaud any attack on parapsychology, but all quite offended by the criticism of psychoanalysis. It was fascinating to see so clearly something that is no doubt true of all of us—we can turn off our critical skepticism when dealing with some of our own favorite beliefs. The interchange ended on a humorous note. Professor Bunge asked them if they really believed that deep inside every man is an instinctive desire to murder his father. They did indeed agree, and then Professor Bunge turned to a young man at the edge of the circle, and asked, "So, do you want to murder me?" To which the man replied with a smile, "Yes indeed, sometimes!" Professor Bunge then identified the man, a professor of physics at the University of Mexico, as his own son.

I have many other happy memories of CSICOP:

- My first invitation to an Executive Council meeting at Phil Klass's apartment in Washington in 1978.
- Going for runs with Ray Hyman at just about every CSICOP meeting or conference—and especially at the conference in St. Vincent, Italy, where nuns, dressed in traditional habits with formidable headgear—laughed and laughed and pointed at us as we ran up the steep road past their convent, and they laughed just as hard when we came down again. They don't see many joggers in these parts!
- Sharing adjacent seats on a Chinese airliner with Phil Klass, at that time senior editor at *Aviation Week*, who explained that the airplane that we were on was a copy of a Boeing 737—except that the Chinese didn't bother with all the duplication that Boeing builds in for backup safety. No backup circuits, he said. Thrilled to learn this at 30,000 feet, I asked him why he was willing to fly on an airplane that had no backups if any system failed. He smiled that impish smile of his and said, "Well, this aircraft we're on has been flying for years, and it hasn't crashed yet, has it?"
- The long rides from Vancouver to Eugene, Oregon, with Barry Beyerstein, and once there, the wonderful times I have had as one of the team, along with Barry, Jerry Andrus, Loren Pankratz, Wally Sampson, and others at Ray Hyman's annual Skeptics' Toolbox workshop.
- Being at a private lunch during a CSICOP conference—not lunch really, but hamburger and lots of magic—with Hyman, Randi, Andrus, Penn and Teller . . . quite a thrill to watch magicians "jam."
- The list goes on. . . .

In fact, the greatest thing about having been fortunate enough to be deeply involved in CSICOP has been the wonderful people that it has brought into my life: Ray Hyman, Barry Beyerstein, Paul Kurtz, James Randi, Phil Klass, Ken Frazier, Lee Nisbet, Barry Karr, Amardeo Sarma, Sue Blackmore, Mario Mendez, the late George Abell, Jerry Andrus, Eugenie Scott, Joe Nickell, Béla Scheiber, and so many, many others.

So, thanks CSICOP, and happy birthday, and here's to the next twenty-five!

Notes

1. J.E. Alcock. 1984. "Parapsychology's Past Eight Years: A Lack-of-progress Report," SKEPTICAL INQUIRER 8 (1984): 312–20.
2. Kurtz, P., J.E. Alcock, K. Frazier, B. Karr, P.J. Klass, J. Randi. "Testing Psi Claims in China: Visit of CSICOP Delegation," SKEPTICAL INQUIRER 12 (1988): 364–75. □

CSICOP Timeline: A Capsule History in 85 Easy Steps

1976

April 30–May 1

CSICOP founded at conference on "The New Irrationalisms: Antiscience and Pseudoscience," SUNY–Buffalo.

Fall

Vol. 1 No. 1 of *The Zetetic* (the SKEPTICAL INQUIRER) published.

1977

Aug. 9

First meeting of CSICOP Executive Council, New York City. It calls upon NBC television for balance in its treatment of paranormal, files complaint against *Reader's Digest* for distortions on alleged psychic phenomena, files complaint with FCC against NBC for total bias in 90-minute quasi-documentary "Exploring the Unknown."

Dec. 12

Time publishes "Attacking the New Nonsense," how a committee of skeptics (CSICOP) is challenging paranormal claims.

1978

February

CSICOP calls NBC response to CSICOP complaints about "Exploring *the Unknown*" *"unacceptable,"* requests presentation of contrasting viewpoint.

April

The Zetetic renamed the SKEPTICAL INQUIRER starting with Vol. 2 No. 2, Spring/Summer 1978.

April

Chairman Paul Kurtz announces that CSICOP has generated "tremendous enthusiasm" among scientists, scholars, media, and the public. CBS and ABC have produced programs presenting committee's viewpoints.

July 13

CSICOP establishes a Canadian section.

Fall

SKEPTICAL INQUIRER increases publication frequency from semi-annual to quarterly.

Fall

FCC reports preliminary decision rejecting CSICOP complaint against NBC's "Exploring the Unknown"; CSICOP appeals.

Dec. 5–6

CSICOP meets in Washington, D.C., meets with staff of House Science and Technology Committee, praises ABC-TV for network special "The Supernatural: Fact, Fiction, or Fantasy?" in which CSICOP members participated.

1979

January

CSICOP lodges complaints against NBC-TV for program "The Amazing World of Psychic Phenomena."

April 27

CSICOP files appeal in U.S. Court of Appeals against the FCC's rejection of committee's complaint against NBC under the Fairness Doctrine for "Exploring the Unknown."

1980

January

SKEPTICAL INQUIRER (Winter 1979–80) publishes four-part special report on claimed "Mars Effect," addressing a controversy that began before CSICOP was founded and will continue for several years more.

1981

May

CSICOP's fifth anniversary. Paul Kurtz notes progress and challenges.

May

CSICOP statement urges police against accepting claims of so-called "police psychics."

October 22–24

CSICOP Executive Council approves policy statement on sponsoring research, testing individual claims, and

conducting investigations, pointing out that organizations, as such, rarely conduct research. The first two of seven points: "1. CSICOP, as a body, does not directly engage in the testing of psychics, research on paranormal phenomena, or investigations on related matters. 2. But CSICOP does encourage such research by its individual members and qualified others."

1982

February

Scientific American publishes Metamagical Themas article by Douglas Hofstadter about SKEPTICAL INQUIRER, contrasting its type of inquiry with that of *National Enquirer*, SI circulation subsequently leaps.

June

First approved local chapter of CSICOP established, Bay Area Skeptics.

Dec. 9–10

CSICOP Executive Council meets in Atlanta. Gives Martin Gardner "In Praise of Reason Award," holds news conference on psychics and "psychic detectives," sets initial guidelines on local groups.

1983

April

George Abell, Paul Kurtz, and Marvin Zelen publish a reappraisal of the "Mars Effect" experiments (SI Spring 1983).

Oct. 28–29

CSICOP holds first international conference since its founding, returning to the SUNY–Buffalo campus. Theme: "Science, Skepticism, and the Paranormal." Seven symposia. Commentator Piet Hein Hoebens calls it CSICOP's "coming of age."

1984

Nov. 9

CSICOP, in news conference at California Academy of Sciences, calls on newspapers to carry a disclaimer on their astrology columns. Mails statement, material to 1,200 U.S. newspapers two weeks later.

Nov. 9–10

CSICOP Conference "Paranormal Beliefs: Scientific Facts and Fictions" held at Stanford University. Sessions on "Space-Age Paranormal Claims," "The Psychic Arms Race," and "Psychic Claims." Keynoter: Sidney Hook.

December

SKEPTICAL INQUIRER expands pages to include 20 percent more editorial material; circulation about 17,000.

1985

June 28–29

CSICOP International Conference, "Investigation and Belief," held at University College, London. CSICOP Executive Council holds joint meeting with French group in Paris, presents news conference with *Science et Vie* magazine.

Fall

CSICOP announces 20th Anniversary Fund, a major capital fund-raising campaign, B.F. Skinner, honorary chairman.

1986

April 25–27

CSICOP 1986 conference held at University of Colorado, Boulder. Theme: "Science and Pseudoscience." Keynote address: Stephen Jay Gould.

Spring

CSICOP celebrates 10th anniversary. SI marks it with special essays by CSICOP Fellows such as Isaac Asimov and Carl Sagan.

Fall

SKEPTICAL INQUIRER announces it is expanding scope to include topics not necessarily related directly to the paranormal and pseudoscience.

1987

Feb. 1

Carl Sagan publishes "The Fine Art of Baloney Detection," in *Parade* magazine, with a laudatory sidebar about CSICOP and SKEPTICAL INQUIRER. SI circulation rises as a result.

April 3–4

CSICOP Annual Conference, Pasadena, California. Symposia on extraterrestrial intelligence, animal language, medical controversies. Simultaneous sessions. Keynote speaker: Carl Sagan, "The Burden of Skepticism."

Fall

SKEPTICAL INQUIRER announces a permanent expansion to 112 digest-size pages per quarterly issue. Ten-year index published.

1988

March 21–April 3

CSICOP delegation visits China, lectures in Beijing, Xian, Shanghai, tests Qigong masters plus children and others alleged to have psychic powers.

Sept. 1

CSICOP wins first (and till-then only) court case brought against it. In U.S. District Court in Hawaii plaintiff Gharith Pendragon loses on all contentions and is ordered to pay the CSICOP defendants fees, costs, and earlier-imposed sanctions.

Nov. 3–4

CSICOP 1988 Conference "The New Age: A Scientific Evaluation," held at Hyatt Regency O'Hare, Chicago. Keynote speaker: Douglas Hofstadter. Three simultaneous sessions at times.

December

CSICOP publishes statement "CSICOP, Groups, and Spokespersons" about relationships with groups listed in SI and who may or may not speak for CSICOP.

1989

Oct. 20–23

First in a series of CSICOP Seminars "Skeptical Inquiry: A Critical Examination of Parapsychology," held at SUNY–Buffalo, with James Alcock and Ray Hyman as faculty; 3-credit certificate of achievement awarded upon completion.

December

SKEPTICAL INQUIRER announces new, expanded effort to give more attention to science, critical inquiry, and science education in addition to investigations of paranormal claims. New graphic design implemented.

1990

March 30–April 1

1990 CSICOP Conference, Washington, D.C., "Critical Thinking, Public Policy, and Science Education" Keynote speaker: Gerard Piel. Banquet speaker: Richard Berendzen.

December

CSICOP announces construction has started on a building, the Center for Inquiry, to house CSICOP and SKEPTICAL INQUIRER (as well as *Free Inquiry*) on a site adjacent to SUNY–Buffalo Amherst campus.

1991

May 3–5

1991 CSICOP Conference at Claremont Hotel, Berkeley/Oakland Hills, California. Sessions on controversies in hypnosis, subliminal pseudoscience, pop psychology, catastrophism and evolution, urban legends, and teaching critical thinking. Keynote speaker: Donald C. Johanson, "In Search of Our Origins."

June

CSICOP announces newly designed, expanded, subscription-only quarterly *Skeptical Briefs* newsletter.

September

CSICOP announces that Phase 1 of its new headquarters complex, the Center for Inquiry, is now fully occupied and functional.

December

Paul Kurtz, in "On Being Sued: The Chilling of Freedom of Expression" (SI Winter 1992), describes lawsuits by Eldon Byrd and Uri Geller against James Randi and CSICOP and the "difficult and perilous situation the skeptical movement now faces" as a result.

1992

April 17–19

CSICOP holds "Magic for Skeptics" seminar, in Lexington, Kentucky, taught by Joe Nickell and Robert A. Baker.

April

SI reports that forty-two daily newspapers are now running CSICOP-recommended disclaimers with their astrology columns.

April

CSICOP announces establishment of legal defense fund to help battle harassing lawsuits filed against skeptics.

June

In "Freedom of Scientific Inquiry Under Siege" (SI Summer 1992), Paul Kurtz reports on another Geller lawsuit.

June

U.S. District Court in Washington, D.C., throws out Uri Geller lawsuit against CSICOP, imposes sanctions against Geller for prosecuting the case.

Aug. 20–24

CSICOP-sponsored "The Skeptics Toolbox" annual workshop series initiated, at University of Oregon, with faculty members Ray Hyman, Barry Beyerstein, Loren Pankratz, Jeff Mayhew, and Jerry Andrus.

Oct. 16–18

1992 CSICOP Conference, "Fairness, Fraud, and Feminism: Culture Confronts Science," held in Dallas. Sessions on multicultural approaches to science, gender issues in science and pseudoscience, fraud in science, crashed saucers, and the paranormal in China. Keynote speaker: Richard Dawkins.

December

SKEPTICAL INQUIRER becomes available at quality newsstands.

1993

April

CSICOP announces plans for creation of a Center for Inquiry research library.

June

In "Our Wide and Fertile Field" (SI, Summer 1993), Editor discusses recent addition to CSICOP's statement of mission: "It also promotes science and scientific inquiry, critical thinking, science education, and the use of reason in examining important issues."

June 14

CSICOP wins lawsuit in Maryland. Federal jury in Baltimore finds CSICOP is not liable for statements made by James Randi about Eldon Byrd.

1994

Spring

Construction begins on Phase II of headquarters campus for CSICOP and SKEPTICAL INQUIRER in Amherst, N.Y.

June 24–26

1994 CSICOP Conference, "The Psychology of Belief," held in Seattle. Sessions on the belief engine, how we fool ourselves, UFOs, unreliability of memory, conspiracy theories, near-death experiences, influencing courtroom beliefs. Keynote address: Carl Sagan, "Wonder and Skepticism."

September

SKEPTICAL INQUIRER adds subtitle, "The Magazine for Science and Reason," publishes final digest-sized, quarterly issue (Fall 1994).

Dec. 9

Uri Geller loses appeal of sanctions awarded CSICOP by district court; Court of Appeals for District of Columbia affirms the sanctions.

1995

January

SKEPTICAL INQUIRER publishes first issue in full-size magazine format, increases frequency to bimonthly (Vol. 19, No. 1, January/February 1995).

March 6

Geller case ends: CSICOP announces court settlement and first payment by Geller to CSICOP of $40,000 of up $120,000. Payment is part of settlement agreement to a court-described "frivolous complaint" made by Geller against CSICOP. The settlement ends five-year legal battle.

June 9

*New CSICOP headquarters — 15,000-*square-foot Center for Inquiry educational and administrative center — is dedicated adjacent to SUNY-Buffalo Amherst, N.Y., campus. Steve Allen, Nobel laureate Herbert Hauptman, *Time*'s Leon Jaroff, many others participate.

July 7

Center for Inquiry-West, CSICOP's West Coast branch office, opens in rented quarters in Los Angeles.

1996

June 20–23

First World Skeptics Congress and 20th Anniversary CSICOP meeting, "Science in the Age of (Mis)Information," held at SUNY-Buffalo. Keynote speaker: Stephen Jay Gould. Conference Address: Leon Lederman. Lunch speaker: John Maddox. Major sessions

on mass media, anti-science, *The X-Files*, and parapsychology, plus triple-concurrent sessions on multiple topics.

June

Asteroids *Skepticus* 6630 and *Kurtz* 6629 named for CSICOP and its founder Paul Kurtz in honor of their contributions to science education and skepticism on CSICOP's 20th anniversary.

July

In "CSICOP at Twenty" (SI July/August 1996) Paul Kurtz reflects on the origins, growth, role, and challenges of CSICOP over its "exhilarating" two decades.

July

Report of second CSICOP delegation to China (June 1995), examining traditional Chinese medicine and pseudoscience in China, published.

1997

January

CSICOP becomes shareholder in TV networks to provide leverage for its criticism of their marketing of fringe science and pseudoscience.

Jan. 9

CSICOP's Council for Media Integrity holds first meeting, in Los Angeles, with co-chairmen Glenn T. Seaborg and Steve Allen, blasts networks for distorted treatments of science.

Nov. 19

Public television airs *Scientific American Frontiers* episode "Beyond Science," hosted by Alan Alda, skeptically examining dowsing, "alien autopsies," graphology, a supposed new energy force, and therapeutic touch, guided by four CSICOP Fellows.

1998

March

CSICOP's new Web site, www.csicop.org, is named among the World Wide Web's top 500 Web sites (and top ten science sites) by computing magazine *Home PC*.

July 23–26

Second World Skeptics Congress, "Armageddon and the Prophets of Doomsday," held at University of Heidelberg, Germany. Plenary sessions on millennium prophecies, natural disasters, anti-science and postmodernists, and scientific skepticism worldwide, plus many concurrent sessions. Keynote speaker: Elizabeth Loftus.

Fall

CSICOP and University of Hertfordshire, U.K., announce creation of the CSICOP Research Scholarship to fund a Ph.D. student for three years to carry out research related to psychology and skepticism.

Nov. 14

CSICOP and Council for Media Integrity host conference "That's Entertainment! Hollywood, the Media, and the Supernatural" in Los Angeles. Steve Allen speaks out against loss of cultural standards in the media. "Candle in the Dark" award given to PBS TV series *Scientific American Frontiers*.

1999

Feb. 26–28

CSICOP co-hosts national conference "Science Meets 'Alternative Medicine,'" Warwick Hotel, Philadelphia.

March 1

An asteroid is named *Klass* 7277 after Philip J. Klass, veteran *Aviation Week* journalist and longtime CSICOP Fellow and UFO subcommittee chairman, for his skeptical evaluations of sensational claims about UFOs. It joins asteroids Kurtz, Gardner, Randi, and Skepticus (named in 1996 after CSICOP).

July/August

SKEPTICAL INQUIRER publishes its first-ever single-subject issue, on Science & Religion. Response is overwhelmingly positive.

2000

January

Ten outstanding skeptics of the twentieth century featured in SKEPTICAL INQUIRER (January/February 2000): James Randi, Martin Gardner, Carl Sagan, Paul Kurtz, Ray Hyman, Isaac Asimov, Bertrand Russell, Harry Houdini, Albert Einstein.

March 20–24

American Physical Society sponsors special session on "The Skeptical Inquirer: The New Paranatural Paradigm," an examination of pseudoscience, at its Minneapolis meeting.

Nov. 10–12

Third World Skeptics Congress — renamed Skeptics World Convention III — at University of Sydney, Australia, is rousing success. Co-sponsored by CSICOP and Australian Skeptics. Forty speakers.

November

Young Skeptics Program inaugurated by CSICOP on its Web site.

2001

January

Permanent building for Center for Inquiry-West — West Coast office for CSICOP and Council for Secular Humanism — purchased in Los Angeles.

February

The Klass Files — electronic texts of back issues of Philip J. Klass's *Skeptics UFO Newsletter* — placed on CSICOP Web site.

March

SKEPTICAL INQUIRER index, for entire magazine from Vol. 1 No. 1 into 2001, completed and placed on CSICOP Web site.

April 30–May 1

25th anniversary of CSICOP.

— Timeline compiled by Kendrick Frazier

□

Science and Politics, Oil and Water

SCOTT O. LILIENFELD

The New Know-Nothings: The Political Foes of the Scientific Study of Human Nature. By Morton Hunt. Transaction Publishers, New Brunswick, New Jersey, 1999. ISBN 0-7658-0497-2. 404 pp. Paperback, $29.95.

The relationship between science and politics has long been an uneasy one. Although the Baconian view of scientists as detached and impartial observers of the natural world is taken seriously by few researchers today, most philosophers of science agree that science works best when investigators are free to pursue all questions in an unfettered fashion. Absolute scientific objectivity, although probably a myth, is a goal to which researchers should aspire. When outside considerations, such as political values and exigencies, intrude on the day-to-day operations of science, the capacity of investigators to openly investigate scientific questions is often hindered.

In his provocative book *The New Know-Nothings: The Political Foes of the Scientific Study of Human Nature*, sociologist Morton Hunt argues that the last several decades have witnessed an increasing breach of the unsteady wall separating science from politics. Although Hunt's book bears implications for all domains of science, his principal focus is on the social sciences of psychology, sociology, and anthropology. For it is these scientific domains that have most often yielded answers distasteful to those with certain political views.

The barrage of attacks on social science research have originated from both ends of the American political spectrum, and Hunt spares neither the extreme political left nor the extreme political right in his trenchant analysis. In some cases, Hunt maintains, these attacks have resulted in the suppression of good science, the promotion of bad science,

or both. Although Hunt's book is not a disquisition on pseudoscience *per se*, it bears significant implications for the dissemination of questionable scientific findings. As Hunt points out, concerted efforts to place limits on the collection and analysis of controversial data may lead to incomplete or erroneous conclusions regarding human behavior. For example, vigorous efforts by some conservatives to halt research on adolescents' sexual activity may forestall the identification of behaviors that place individuals at heightened risk for human immunodeficiency virus infection. Personal threats against Elizabeth Loftus, Harold Lief, and others who have expressed skepticism concerning the widespread existence of recovered memories of child abuse may discourage an open discussion of suggestive therapeutic techniques that can elicit false recollections of early trauma.

Among the diverse areas of research examined by Hunt are genetic influences on intelligence and violence, sex differences in mathematical and spatial ability, the diagnostic validity of premenstrual syndrome, the existence of recovered memories of child abuse, the efficacy of controlled drinking as a treatment for alcoholism, the validity of the polygraph ("lie detector") test, and the success of needle exchange programs for intravenous drug abusers. In each of these cases, individuals with certain sociopolitical agendas have attempted to suppress research findings that are not to their liking.

In a number of cases, researchers' careers and livelihoods have been

Scott O. Lilienfeld is an associate professor of psychology at Emory University in Atlanta and a SKEPTICAL INQUIRER *Consulting Editor.*

threatened or damaged. For example, educational psychologist Arthur Jensen and personality psychologist J. Phillippe Rushton have been the repeated targets of intimidation for their research on the genetic basis of the black-white IQ difference. Jensen has been heckled and even spat on by protestors, and has been forced to cancel several public appearances. Rushton nearly lost his tenured position at the University of Western Ontario despite his high level of scholarly productivity and solid teaching record. Although Hunt acknowledges that the research of Jensen and Rushton is certainly not beyond scientific reproach, he argues persuasively that many of the attacks against them have been more personal than substantive. If their findings and conclusions are questionable, Hunt maintains, they should be openly criticized in the high court of scientific peer review rather than censored or suppressed.

Psychologists Mark and Linda Sobell were the apparent victims of a prolonged witch hunt following their publication of alcoholism treatment findings that raised questions concerning prevailing dogma. The treatment of alcoholism in the United States has been influenced substantially by the tenets of Alcoholics Anonymous and similar organizations, which insist that abstinence is the only feasible long-term goal of alcoholism treatment. After the Sobells published a study suggesting that some alcoholics can benefit from a treatment approach emphasizing controlled (moderate) drinking, they were accused by another investigative team of fabricating data. Although these allegations were categorically rejected by several independent panels, at least one researcher has continued to accuse the Sobells of academic misconduct despite compelling evidence to the contrary.

Hunt traces the increasingly steady drumbeat of political assaults on social science research to several sources. First, Hunt contends that the precipitous increase in militant social activism over the past several decades has exacted a heavy price on social science research. A swelling minority of extreme liberals and conservatives have mounted attacks on research projects examining politically incendiary issues, such as the genetics of intelligence and the potential effects of day care on children's emotional adjustment. Second, the growth of congressional lobbies and special interest groups has encouraged groups with small but vocal constituencies to obstruct controversial research. Third, genetic engineering, nuclear power, and other technological developments that some perceive as dangerous have resulted in a growing mistrust of science and its applications. Fourth, Hunt argues that certain members of the extreme political right have acquired increasing power to place constraints on research that might be construed as undermining the sanctity of the American family. For example, Jesse Helmes and several other United States senators have successfully obstructed federally funded research that involves asking adolescents about their sexual behaviors.

If *The New Know-Nothings* has a significant shortcoming, it is Hunt's occasional tendency to paint with an overly broad brush. Although Hunt is typically careful to distinguish politically motivated attacks from legitimate scientific criticisms, he at times blurs this boundary. For example, Hunt takes issue with recent attacks on self-report integrity ("honesty") tests, which are used by thousands of U.S. companies to detect prospective employees at risk for antisocial behavior on the job. Hunt notes that integrity tests have been criticized by civil rights advocates and other social critics on the grounds of questionable validity and potential racial bias, and he attempts to rebut these claims by drawing on the relevant literature. Nevertheless, Hunt does not point out that these tests have been shown in controlled studies to be markedly susceptible to coaching effects, or that much of the evidence for their validity derives from unpublished studies conducted by the test publishers themselves. Nor does he note that some integrity test publishers have been less than cooperative with prospective researchers who wish to subject their claims to close scrutiny (e.g., see Goldberg, Grenier, Guion, Sechrest, and Wing, 1991, *Questionnaires used in the prediction of trustworthiness in pre-employment selection decisions: An A.P.A. Task Force Report*, Washington, D.C.: American Psychological Association).

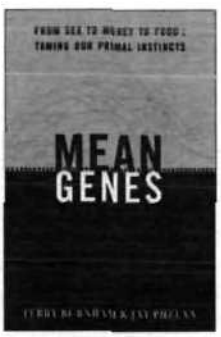
Hunt's discussion of the animal rights movement also lacks balance. Hunt correctly observes that some animal rights advocates have disrupted research projects by subjecting researchers to personal threats and even physical assaults in some cases. Such attacks have been terribly damaging to researchers and their families, and have often been antithetical to scientific progress. For example, Marilyn Carroll of the University of Minnesota has been repeatedly harassed and threatened by protesters who object to her research on animal models of cocaine and nicotine addiction.

Nevertheless, Hunt neglects to address a very different problem: In a number of academic departments it has become virtually taboo to raise questions regarding the complex ethical dilemmas associated with invasive animal research. Most dispassionate observers would agree that although invasive animal research can yield important scientific knowledge, one must thoughtfully weigh the ethical and pragmatic costs and benefits of such research before undertaking it. But relatively few academic departments in which invasive animal research is conducted encourage an open discussion of these costs or offer course background in the ethics of animal research.

It is a shame that Hunt's book appeared prior to the recent hue and cry in response to a quantitative literature review published by psychologist Bruce Rind and his colleagues in the journal *Psychological Bulletin*. This 1998 article

revealed that the correlation between child sexual abuse and later psychopathology may be considerably weaker than many researchers had supposed (see Berry and Berry, "The Congressional Censure of a Research Paper," SI, January/February, 2000 and Hagen, "Damaged Goods," SI, January/February 2001). Following the publication of this article, Rind and his collaborators were harshly condemned by radio personality Dr. Laura Schlessinger and accused by several politicians of endorsing pedophilia, even though they were careful in their article to note that their findings could not be used to justify child sexual abuse. In addition, their article and its conclusions were formally denounced by a 355 to 0 vote in the United States House of Representatives. The Rind affair bears disturbing implications for academic and scientific freedom and suggests that we can ignore Hunt's message only at our peril. A description of this lurid affair would make a fitting postscript to Hunt's book.

Despite its imperfections, *The New Know-Nothings* makes for gripping and often disconcerting reading. Social science researchers, particularly those investigating potentially controversial or unpopular questions, should place it at the top of their reading lists.



Self Help From Science

DANIEL GRASSAM

Mean Genes: From Sex to Money to Food: Taming Our Primal Instincts. By Terry Burnham and Jay Phelan. Perseus Publishing, Cambridge, Massachusetts, 2000. ISBN 0-7382-0230-4. 263 pp. Hardcover, $24.

Without opening a debate on mind/body dualism (or more specifically here mind/brain dualism), *Mean Genes* endeavors to help people understand why it is their brains seem to work against their desires. Why, for example, New Year's resolutions to eat more healthfully and save more money don't last any longer than the first offer of dessert or new car advertisement.

"Consider this book an owner's manual for your brain," assert the authors in the opening line of this self-help book from the scientifically minded. Authors Terry Burnham and Jay Phelan have put together a book for the general reader that is founded in the research efforts of hundreds of scientists across myriad disciplines. The authors draw examples from their own lives, the animal kingdom, psychology, and pop culture and blend it with a friendly conversational tone and smatterings of humor. The result is both enjoyable and educational.

Covering topics like greed, infidelity, relationships, food, and money, Burnham and Phelan approach each topic with the mantle of scientific inquiry. In the section "Please Don't Feed the Humans" the authors discuss the human predicament of obesity and point out that it was our ancient ancestors' constant instinctual hunger that helped them to succeed in surviving and thus reproducing. Knowing that your ancestors also couldn't control their appetite may not offer comfort but it does bring understanding. The authors' stated goal is to help the reader build a pair of "*Mean Genes* glasses" through which to view their world. Thus empowered with understanding, we are better equipped to handle our battles with self-control.

The book suggests self-control strategies, which the authors admit are to some extent common sense and commonplace. The improvement strategies in *Mean Genes* may not be original but the context in which they are given is. It is unfortunate that this book is shelved in the biology section of the bookstore instead of in self-help where it would get the attention it deserves. *Mean Genes* would make a welcome change to a section cluttered with shamanism and feng shui.

In naming this book the authors do not presume that our genes harbor malice and are actively working against us. Burnham and Phelan's "mean gene" is a literary device. Our genes are "mean" because they "predispose us to certain failings." These failings, they note, are only failings in light of a modern world with automobiles and remote control television. Hunter-gatherers expend hundreds of calories acquiring their food whereas we need only dial our local pizza delivery service. The authors are also quick to point out a basic tenet of evolution, that each of our "mean genes" in one way or another helped humans to survive or else they would not be with us today.

This raises the question about how much our genes are responsible for our psychological development. The authors recognize that genes are not the only influence on human behavior. Leaving the cultural and nurturing effects to other works, *Mean Genes* focuses on the role played by our genes in determining our actions.

Endnotes and citations are noticeably missing from the text. They can be found on the *Mean Genes* Web site at www.meangenes.org. In leaving out citations and scientific jargon Burnham and Phelan have written a book with a foundation in science that does not read like a science textbook. □

Daniel Grassam writes from Denver, Colorado.

NEW BOOKS

Listing does not preclude future review.

How We Got to be Human: Subjective Minds with Objective Bodies. **William H. Libaw.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2000. ISBN 1-57392-813-5. 390 pp. Hardcover, $35. An exploration of subjective life as experienced by animals, apes, and humans. Consciousness, Libaw argues, was the start of mentality, which grew as animals evolved until it became, in humans, mind. He brings together information from scholars and scientists of evolutionary science and the humanities to trace the evolutionary development and expansion of the ability to make and use conscious mental concepts.

Psychobabble and Biobunk: Using Psychology to Think Critically About Issues in the News. **Carol Tavris.** Prentice Hall, Inc., Upper Saddle River, NJ 07458. 2001. ISBN 0-13-027986-2. 107 pp. Softcover. A collection of short opinion essays and book reviews written for the *Los Angeles Times*, *New York Times*, and several magazines. The first eight deal with science versus pseudoscience, including the appeal of pseudoscience, the popularity of predictions, the misuse of opinion polls, the misuses of pop-psych surveys, stories versus statistics, illusory correlations, and thinking critically about alternative medicine and about mystical messages.

Psychology in Perspective (Third Edition). **Carol Tavris and Carole Wade.** Prentice Hall, Inc., Upper Saddle River, NJ 07458. 2001. ISBN 0-13-028326-6. 639 pp. Softcover. Introductory psychology text is the authors' attempt to respond to the AAAS policy statement on the importance of teaching introductory science courses for depth of concept rather than breadth of topics. Their reconceptualization provides an alternative to the traditional, topic-by-topic way of teaching psychology. The material is organized by what they regard as the five major perspectives in the field: biological, cognitive, learning, sociocultural, and psychodynamic. Another emphasis is to give a flavor of the real debates and controversies within psychology.

The Psychology of the Psychic (Second Edition). **David Marks, Ph.D.** Forewords by Martin Gardner. Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2000. ISBN 1-57392-803-8. 246 pp. Softcover, $19. A critical analysis of claims of psychic powers covering virtually all the major players of the 1970s, 1980s, and 1990s. Seven of the boldest claims of the last thirty years are critically investigated: Claims of remote-viewing abilities (broken into the Targ & Puthoff SRI experiments of 1972–1985 and the Stargate experiments of 1985–1995 by Lantz, Kuke, & May); Ganzfeld ESP ability (mainly Honorton and Bem); the ability to detect unseen staring (Sheldrake); pets' ESP ability (Sheldrake); Uri Geller's ESP ability; Geller's psychokinesis ability; and Geller's clairvoyant ability (the last three involving various experiments by Targ & Puthoff). Psychologist Marks (City University, London) has long been involved in critically investigating claims and reporting the results. He notes that all seven claims lack scientific evidence to support them but says the public is nevertheless entitled to an independent evaluation that is informed by the evidence. That is his aim. This is a significant update by Marks, with much new material, of an important 1980 book written with his late colleague Richard Kammann.

Scientific Laws, Principles, and Theories: A Reference Guide. **Robert E. Krebs.** Greenwood Publishing Group, Inc., 88 Post Road West, P.O. Box 5007, Westport, CT 06881-1502. 2000. ISBN 0-313-30957-4. 416 pp. Hardcover, $65. A guide to the important laws, principles, theories, hypotheses, and concepts that reflect the progression of scientific descriptions and explanations of nature. The entries are listed alphabetically, usually according to the name of the person credited with formulating the law or concept. Some are familiar, some not. (Examples: Avagadro's Law, Fitzgerald's Concept of Electromagnetic Contraction, Gallo's HIV-AIDS Theory, Gamow's Big Bang Theory, Pearson's Statistical Theories, and Richter's Theory for Earthquake Magnitude.) Intended for high school and college students and for general readers interested in science. Glossary. Index.

—Kendrick Frazier

ARTICLES OF NOTE

Bryant, Vaughn M. Jr. "Does Pollen Prove the Shroud Authentic?" *Biblical Archaeology Review*, 26(6):36–44, 75. November/December 2000. A long review essay about the pro-Shroud book *Flora of the Shroud of Turin*. Bryant, a pollen scientist, argues that the studies done so far are not detailed enough to determine whether the pollen on the Shroud of Turin is from Israel.

Carnes, Tony. "Design Interference." *Christianity Today*, 44(14):20. December 4, 2000. Baylor University, a Southern Baptist school, recently fired William Dembski as the head of their Polanyi Center for Complexity (he remains on the University's faculty). This is part of the controversy in the denomination between creationists, as represented by Intelligent Design theorists, and evolutionists.

Derbyshire, John. "Valiant for Truth." *The New Criterion*, 19(5), January 2001. A tribute to Martin Gardner, or "Sir Martin" as Derbyshire affectionately names him. Derbyshire talks about his deep admiration for Gardner and touches on Gardner's views on everything from religion and superstition, to mathematics and numerology. "Nobody has worked harder or more steadily to defend and enlarge this little firelit clearing we hold in the dark chittering forest of unreason," writes Derbyshire.

Downie, J.R., and N.J. Barron. "Evolution and Religion: Attitudes of Scottish First Year Biology and Medical Students to the Teaching of Evolutionary Biology." *Journal of Biological Education*, 34(3): 139–146, Summer 2000. For more than a decade first-year biology students at a Scottish university were asked about their belief in evolution. Between 4 and 11% rejected it; the percentage has decreased slightly but significantly. In a single year study, ten percent of medical students also rejected evolution.

Friesel, Mark. "Does Religion Prize Mislead Scientists?" (Letters column) *Physics Today*, 54:82, February 2001. In his letter, Friesel accuses "misled scientists" of compromising their integrity by "creating commonality between religion and science" simply for the sake of winning the Templeton Prize for Progress in Religion. He views the prize as a "bribe," a way to lure well-respected scientists toward the "right-wing religious cause."

Hoffrage, Ulrich, Samuel Lindsey, Ralph

Hertwig, and Gerd Gigerenzer. "Communicating Statistical Information." *Science*, 290: 2261–2262, December 22, 2000. A study was conducted at Harvard Medical School in which faculty, staff, and students were asked to find the probability of certain diseases. More questions were answered correctly when the statistics were given not in probabilities but in natural frequencies (e.g., "of every 10,000 people 30 have colorectal cancer. . . ", etc.), which is how "humans have experienced statistical information over most of their history." The authors conclude that "teaching representations rather than rules—and expressing statistical information in natural frequencies where appropriate—can help to foster the statistical reasoning needed to make sound decisions."

Jaroff, Leon. "Talking to the Dead." *Time*, March 5, 2001, p. 52. Skeptics question the powers of John Edward, the ever-popular psychic medium who claims the ability to "connect with energies of people who have crossed over." Critics of Edward—the likes of whom include magician James Randi—accuse him of using well-known "cold reading" techniques. As Jaroff says, it is really just "a sophisticated form of Twenty Questions." Jaroff provides evidence of outright chicanery in Edward's show, including aides striking up revealing conversations with audience members and asking them to fill out cards before the show begins and videotape of the sessions edited down so that wrong answers appear correct. On a subsequent *Larry King Live* show on CNN on March 6, Jaroff and CSICOP chairman Paul Kurtz appeared with Edward and four others in challenges about such evidence (see News & Comment, this issue).

Gawande, Atul. "Investigations: Under Suspicion: The Fugitive Science of Criminal Justice." *The New Yorker*, January 8, 2001, pp. 50–53. "The law has balked at submitting its methods to scientific inquiry," writes Gawande. Submitting the legal system to scientific scrutiny—as was done with medicine in the last century—could completely transform it. In this article, he discusses current remedies in place that are meant to bring the criminal justice system into the scientific arena; yet, only a few police departments (most of them in Canada) have adopted these practices. So why is the legal system slow to change? According to Gawande, "the legal system takes its methods for granted. Law enforcement . . . is in thrall to a culture of precedent and convention, not of experiment and change. And science remains deeply mistrusted."

Hutton, Ronald. "Paganism and the Polemic: The Debate over the Origins of Modern Pagan Witchcraft." *Folklore*. 111(1):103–117. April 2000. Is Wicca the modern reappearance of an ancient religion or a twentieth century invention? Hutton, who leans toward the latter view, responds to criticism by Donald H. Frew, who supports Margaret Murray's theory that the victims of medieval witch trials were practicing pagans.

Khpera, Saafu. "They Came Before Columbus." *New African*, (392):16–20. January 2001. Stone carvings and terracotta figures found in South America indicate that Africans may have arrived before Columbus. Books by Ivan Van Sertima and Alexander von Wuthenau are cited.

Moran, Maureen F. "'Light No Smithfield Fires': Some Victorian Attitudes to Witchcraft." *Journal of Popular Culture*.

SCIENCE BEST SELLERS

Top Ten Best Sellers in **New York**

1. ***Guns, Germs, and Steel: The Fates of Human Society***
   Jared Diamond
   W.W. Norton & Company
2. ***Galileo's Daughter: A Historical Memoir of Science, Faith, and Love***
   Dava Sobel
   Penguin USA
3. ***Genome: The Autobiography of a Species in 23 Chapters***
   Matt Ridley
   Harpercollins
4. ***The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory***
   Brian Greene
   Vintage Books
5. ***The Design of Everyday Things***
   Donald A. Norman
   Currency/Doubleday
6. ***Dr. Folkman's War: Angiogenesis and the Struggle to Defeat Cancer***
   Robert Cooke, C. Everett Koop
   Random House
7. ***Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time***
   Dava Sobel
   Penguin USA
8. ***The Code Book: The Science of Secrecy from Ancient Egypt to Quantum Cryptography***
   Simon Singh
   Anchor Books
9. ***Godel, Escher, Bach: An Eternal Golden Braid***
   Douglas R. Hofstadter
   Basic Books
10. ***A Brief History of Time***
    Stephen Hawking
    Bantam Doubleday Dell Pub

By arrangement with Amazon.com, March 2001.

33(4):123–151. Spring 2000. The Victorians considered themselves far too sophisticated to believe in witchcraft, but their art and literature are haunted by images of witches. Moran sees this as a reaction to the changing roles of women.

Napier, Tom. "Are Mensans Skeptical Enough?" *Mensa Bulletin: The Magazine of American Mensa*, January 2001, pp. 8, 18. "Mensans devote immense effort to convoluted systems of thought without considering that their foundations may be false," says Napier, founder of PhACT, a Philadelphia-based skeptics' organization. He urges Mensans to think critically, and to use their problem-solving skills wisely. "It is a waste of good brainpower, not to mention an embarrassment to the rest of us, when Mensans fail to apply critical thinking before engaging their brains."

Perlman, David. "Sideshows of Science: As Knowledge Expands, So Do the Ranks of Believers in Fakery." *San Francisco Chronicle*, January 8, 2001, p. A6. An article focusing on the public's ever-growing belief in pseudoscience from astrological Internet sites to television psychics and alternative healers. Science editor Perlman references the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), the SKEPTICAL INQUIRER, scientist Stephen Jay Gould, and magician James Randi as all being forces in the crusade toward critical thinking.

Radford, Benjamin, and Robert Bartholomew. "Pokémon Contagion: Photosensitive Epilepsy or Mass Psychogenic Illness?" *Southern Medical Journal.* 94(2): 197–204, February 2001. A study of the reported illness outbreak in 1997 of more than 12,000 Japanese children who had various signs and symptoms of illness after watching an episode of the popular children's cartoon, Pokémon. The features of the episode are consistent with a diagnosis of epidemic hysteria, triggered by mass media reports. (For a popular report on this study see Benjamin Radford's article in this issue of SI.)

"Science or Hoax?" *Odyssey*, Vol. 9, No. 9, December 2000. Entire issue of science magazine for kids grades 4–9 devoted to helping readers "distinguish logic from delusion, charlatans from truth-tellers." Short, illustrated, lively articles on "The 'Paranormal Hoax'" (by Joe Nickell); the Shroud of Turin Debate; "The Lie That Lasted 40 Years" (Piltdown Man); "The Loch Ness Monster: Anatomy of a Hoax"; "How a Skeptic Investigates" (by Joe Nickell again); "Urban Legends and Suburban Myths (by Robert T. Carroll)"; dowsing and tests of dowsing (the latter by James Randi); "Internet Hoaxes"; "Looking at ESP"; an interview about skeptical inquiry with SI Editor Kendrick Frazier, and other short features. Clifford A. Pickover served as the consulting editor for this fine treatment of hoaxes, pseudoscience, and skepticism for young readers. (*Odyssey* is published by Cobblestone Publishing, 30 Grove St., Suite C, Peterborough, NH 03458.)

Thornton, Brian. "The Moon Hoax: Debates About Ethics in 1835 New York Newspapers." *Journal of Mass Media Ethics.* 15(2):89–100. 2000. In 1835 the New York *Sun* claimed that people had been seen on the Moon through telescopes, one of the major hoaxes in newspaper history. Thornton examined editorials and readers' letters that appeared in a sample of New York papers of the time and found that few people seemed to object to the fraud, possibly because few had taken it seriously.

Todd, Paul. "Pickin' on Wiccans." *Vancouver*, 33(12):28. December 2000. A short essay complaining about Wiccans (neo-Pagan witches) who complain that popular culture tells untruths about witches. Todd argues that they are a New Age fad with no right to tell others how to interpret their alleged ancestors.

—Kendrick Frazier, Jodi Chapman, and Robert Lopresti

Putting a Better Face on the 'Face' on Mars

GARY P. POSNER

In my November/December 2000 cover article "The Face Behind the 'Face' on Mars: A Skeptical Look at Richard C. Hoagland," the NASA photos of the so-called "Face" were, regrettably, not as enhanced as other available NASA images.

The cover photo (also used on page 21) was the ubiquitous "Face" image from the 1976 Viking 1 mission—the image most familiar to everyone. But an enhanced version of that photo, revealing more of the shadowed side and eliminating the black dots (missing data points) is available from NASA, and we are pleased to now present it (figure 1a). A second, less familiar photo of the face was also obtained by Viking 1, and is shown in figure 1b.

The 1998 Mars Global Surveyor (MGS) image used in the article was, for technical reasons (related to the way NASA's mapping was being carried out), somewhat "stretched" along the "Face's" vertical axis. I had previously seen both this image and NASA's stretch-reduced version, but never together, and not until a reader (George J. Haas of the Cydoniainstitute.com Web site) complained did I appreciate the difference. Figures 2a and 2b show both the Jay Leno-ish version we used (left) and the one that more faithfully shows the "Face's" true proportions. *Mea culpa.*

NASA has also published a "light-reversed" version of the same photo, to more closely simulate the Viking photos' lighting conditions. Some have remarked that this version does indeed look a bit more like a head, though that of a lion rather than a humanoid.

Mark Kelly, a graphic artist, has performed additional "enhancements" to this image (e.g., slightly repositioning some features and adding shading around the "eyes"), thus exaggerating its humanoid qualities. Not surprisingly, Richard Hoagland's "Enterprise Mission" Web site refers to Kelly's creation as the "properly processed and ortho-rectified version" of the photo, i.e., presumably showing the "Face" as it *really* looks. You compare and judge (see figures 3a and 3b).

In my article's opening paragraph, I myopically referred to "Cydonia" as if it encompassed merely the few hundred square miles of terrain containing the "Face" and the other "monuments." Cydonia is actually much vaster, and though the area around the "Face" was of no interest to NASA, the far northern portion of Cydonia was initially the preferred landing site for Viking 2, being about as close as a lander could get (due to the mission's latitude constraints) to the edge of the North Polar Ice Cap, and thus to the possibility of encountering atmospheric water. Ultimately, however, the terrain appeared too rugged to risk a landing there.

Hoagland associate Michael Bara, whose vitriolic response to my article is featured on the "Enterprise Mission" Web site, argues that the "Face" is situated in what was likely an ancient Martian ocean, and is thus (contrary to my article's opening remarks) an excellent place to search for traces of past life. However, I understand the prevailing informed opinion (though not unanimous) to have been, both at the time of the Viking mission and Mars Global Surveyor, that Cydonia was most likely never an ocean, and that its features are the result of erosion by other forces (e.g., wind) rather than water.

Bara also says that Hoagland didn't write any of the words attributed to him in the promotional material for the Sierra Leone Mars stamp set—that "the whole 'quote' was written by [stamp promoter Alan Shawn] Feinstein and used without Hoagland's permission." If so, I am happy

Figure 1a. An enhanced version of the Viking 1 photo #35A72.

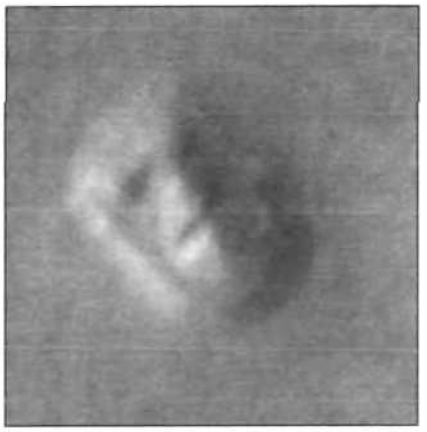


Figure 1b. An enhanced version of Viking 1 photo #70A13.

Gary P. Posner, who practiced internal medicine for fifteen years before launching out into medical software, is founder and executive director of Tampa Bay Skeptics and a CSICOP Consultant. Address: 5319 Archstone Dr. #102, Tampa, FL 33634. E-mail: garypos@aol.com. Web: http://members@aol.com/garypos.

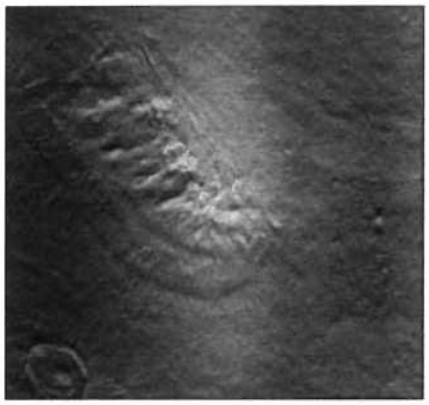


Figure 2a. The "stretched" Mars Global Surveyor image (used in the original article).

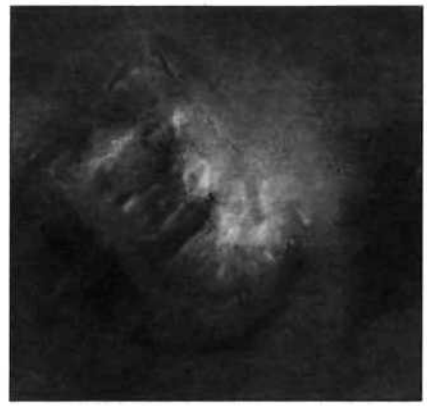


Figure 2b. NASA's rectified/unstretched version.

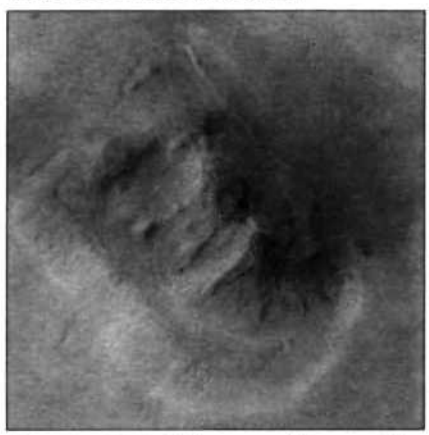


Figure 3a. NASA's "light reversed" image of the MGS photo.

Figure 3b. Graphic artist Mark Kelly's so-called "properly processed and ortho-rectified version" of the same image.

to clarify the record, though I wonder what part of the quote Hoagland could possibly find disagreement with.

And Bara decries my admittedly ridiculous "earthlings—from our own future" reference (re: the possible architects of the "Face") as a "blatant attempt to put words in [Hoagland's] mouth." I didn't ascribe my nutty idea to Hoagland, but little did I know at the time (nor does Bara's complaint hint at) how close I had actually come to Hoagland's current view—if only I had instead said "our own *past*." The following is verbatim from Richard Hoagland's appearance on Mike Siegel's (Art Bell's) *Coast to Coast A.M.* radio program from the night/morning of November 17/18, 2000:

> The model that I am most comfortable with now is that the human race is a lot older—a lot more extraordinary—than we have ever been told. And the fact [is] that we once used to live all over the solar system—that the extraterrestrials are *our* guys. *We're* the guys that built the stuff on Mars . . . and the stuff that we think we are now seeing on [our own Moon and on] the moons of Jupiter. . . . There is so much that we are now getting glimmers of. . . . [My next book] is going to be called *The Heritage of Mars: Remembering Forever*, because my thesis now, based on almost twenty years of doing this [research] . . . is "history is not as we've been told." . . . It has been carefully manipulated so we are not allowed to see this breathtaking heritage, because it would not benefit a few who are in control . . . and who want us to live this diminished existence not knowing who we really are because, frankly, it would threaten the power structure.

Two additional clarifications: A reader has informed me that the split between Hoagland and Chuck Harder was not permanent, and that Hoagland has been a frequent guest on Harder's radio program during the past few years. I have also learned that NASA's Lewis Research Center was renamed some time ago in honor of John Glenn. □

IN SEARCH OF FISHER'S GHOST from page 21

occurred in 1955 when "a white cow in the distance in the pitch darkness gave some onlookers a scare" ("Fisher's Ghost" 1957).

Clearly the story of Fisher's ghost has many of the elements that make a tale worth telling—and retelling: an historical basis, intrigue and murder, a quest for justice, and a spine-tingling resolution. Not surprisingly, the "ghost" seems to have taken on a life of its own.

Acknowledgments

In addition to Peter Rodgers, I want to express my gratitude to Barry Williams, executive officer of Australian Skeptics; Georgina Keep, Local Studies Librarian, Campbelltown City Library; and many others who assisted, including staff of the Campbelltown Town Center (city hall).

References

Brunvand, Jan Harold. 1978. *The Study of American Folklore: An Introduction.* Second ed. New York: W. W. Norton, 108–109.

Campbelltown City Library. 2000. Vertical file (including all the newspaper clippings used in this article).

Cranfield, Louis. 1963. Was Australia's greatest ghost story a hoax? Adelaide, S.A., *Chronicle*, October 24.

Cusack, Frank, ed. 1967. *Australian Ghosts.* Sydney: Angus & Robertson, 1–24.

Davis, Richard. 1998. *The Ghost Guide to Australia.* Sydney: Bantam, 16–18.

Finucane, R.C. 1984. *Appearances of the Dead: A Cultural History of Ghosts.* Amherst, N.Y.: Prometheus Books.

Fisher's ghost. 1853. Household Words, 7: 6–9.

Fisher's Ghost appears but crowd disappoints. 1957. *Campbelltown-Ingleburn News* (Campbelltown, N.S.W.), June 18.

Fowler, Verlie. 1991. Colonial Days in Campbelltown: *The Legend of Fisher's Ghost*, revised ed. Campbelltown, N.S.W., Australia: Campbelltown & Airds Historical Society.

Ghost that trapped a murderer? 1955. Sydney, N.S.W., *The Sun-Herald*, July 3.

Illusionist brought Fisher's ghost to Pitt St. playhouse. 1984. *Daily Mirror* (clipping in Campbelltown 2000), March 22.

Lang, John. n.d. *Botany Bay or True Stories of the Early Days of Australia*; excerpt from 1859 ed. reprinted in Cusack 1967.

Lee, C. N. 1963. Another ghost version, *Campbelltown-Ingleburn News* (Campbelltown, N.S.W.), February 12.

Nickell, Joe. 2001. Mysterious Australia. SKEPTICAL INQUIRER 25(2), March/April: 15–18.

Supposed murder. 1826. Notice in *The Australian*, September 23, cited in Davis 1998.

Supreme Criminal Court. 1827. Proceedings published in Sydney *Gazette*, February 5. □

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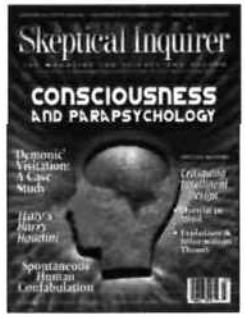

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NOVEMBER/DECEMBER 1999 (vol. 23, no. 6): The Universe and Carl Sagan, *Davidson* / The millennium thought contagion, *Lynch* / Debunking the debunkers: A response to astrology, *Kelly* / The physics behind four amazing demonstrations, *Willey* / Another lunar effect put to rest, *Sweet* / Special Report: Blooming shroud claims, *Nickell* / The star of Bethlehem, *Gardner.*

SEPTEMBER/OCTOBER 1999 (vol. 23, no. 5): Special Report: Flash! Fox news reports aliens may have built the pyramids, *Carrier* / Where do we come from?, *Pigliucci* / Profits and prophecy, *Wise* / Projective measures of personality and psychopathology: How well do they work?, *Lilienfeld* / What every skeptic ought to know about subliminal persuasion, *Epley, Savitsky, and Kachelski* / Carlos Castaneda and New Age anthropology, *Gardner.*

JULY/AUGUST 1999 (vol. 23, no. 4): Special Issue: Science and Religion, Conflict or Conciliation? Celebrating creation, *Raymo* / Should skeptical inquiry be applied to religion?, *Kurtz* / The 'Science and Religion' movement, *Scott* / Science and the versus of religion, *Palevitz* / Science vs. religion, *Pazameta* / Anthropic design, *Stenger* / Scientific skepticism, CSICOP, and the local groups, *Novella and Bloomberg* / Two mind-sets, *Allen* / God is dead, after the weather and sports, *Reiss* / Whence religious belief?, *Pinker* / Non-overlapping magisteria, *Gould* / You can't have it both ways: Irreconcilable differences?, *Dawkins* / The concerns of science, *Mayr* / The religious views of Stephen Gould and Charles Darwin, *Gardner.*

MAY/JUNE 1999 (vol. 23, no. 3): Special Section: Urban legends. The snuff film, *Stine / Bitter harvest: The organ-snatching* urban legends, *Radford* / Bigfoot's screen test, *Daegling and Schmitt* / Tracking Bigfoot on the Internet, *Zuefle* / Statement analysis, *Shearer* / NAGPRA, science, and the demon-haunted world, *Clark* / Urine therapy, *Gardner.*

MARCH/APRIL 1999 (vol. 23, no. 2): Special Report: The ten-percent myth, *Radford* / Superstition and the regression effect, *Kruger, Savitsky, and Gilovich* / Psychology of the seance, *Wiseman* / Dowsing and archaeology, *van Leusen* / Hidden messages in DNA?, *Larhammar and Chatzidimitriou* / The real Chief Seattle was not a spiritual ecologist, *Abruzzi* / Joint pain and weather, *Quick* / Acupressure, zone therapy, and reflexology, *Gardner.*

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NOVEMBER/DECEMBER 1998 (vol. 22, no. 6): Gaps in the fossil record: A case study, *Thomas* / The Martian Panic sixty years later *Bartholomew* / The perils of post-hockery, *Ruscio* / May the force be with you, *Krauss* / The Mead-Freeman controversy: A fresh look: Much ado about nothing The 'Fateful Hoaxing' of Margaret Mead, *Côté* / Margaret Mead, Derek Freeman, and the issue of evolution, *Shankman* / Second World Skeptics Congress: Science and reason, foibles and fallacies, and doomsdays / Science and the unknowable, *Gardner.*

SEPTEMBER/OCTOBER 1998 (vol. 22, no. 5): Special Section: What are the chances?, Coincidences: Remarkable or random?, *Martin* / Numerology: Comes the revolution, *Dudley* / Calculated risks, *Cole* / How to study weird things, *Trocco* / Why would people *not* believe weird things?, *Anderson* / Starkle, starkle, little twink, *Hayes* / Of planets and cognitions: The use of deductive inference in the natural sciences and psychology, *Schlinger Jr.* / What's going on at Temple University?, *Gardner.*

JULY/AUGUST 1998 (vol. 22, no. 4): Special Report: Mars Global Surveyor photographs 'Face on Mars', *Morrison* / Magnetic therapy: Plausible attraction, *Livingston* / Biomagnetic pseudoscience and nonsense claims, *Sabadell* / Catching up with eighteenth century science in the evaluation of therapeutic touch, *Ball and Alexander* / Paranormal depictions in the media: How do they affect what people believe?, *Sparks* / Planting a seed of doubt, *Shneour* / Essiac: The not-so-remarkable cancer remedy, *McCutcheon* / Near-Earth objects: Monsters of Doom?, *Gardner.*

MAY/JUNE 1998 (vol. 22, no. 3): Special Section: The Aliens Files, Abduction by aliens or sleep paralysis?, *Blackmore* / *Before* Roswell: The meaning behind the crashed-UFO myth, *Bartholomew* / Case closed: Reflections on the 1997 Air Force Roswell report, *Gildenberg and Thomas* / Gray Barker: My friend, the myth-maker, *Sherwood* / A skeptic living in Roswell, *Churchill* / Zero-point energy and Harold Puthoff, *Gardner.*

MARCH/APRIL 1998 (vol. 22, no. 2): Special Report: The price of bad memories, *Loftus* / Science, delusion, and the appetite for wonder, *Dawkins* / A mind at play: An interview with Martin Gardner, *Frazier* / Houdini and Conan Doyle: The story of a strange friendship, *Polidoro* / Spontaneous human combustion: Thoughts of a forensic biologist, *Benecke* / Did Adam and Eve have navels?, *Gardner.*

JANUARY/FEBRUARY 1998 (vol. 22, no. 1): Testing new claims of dermo-optical perception, *Benski and CRSSA Scientists* / Magnetic water and fuel treatment, *Powell* / Dowsing the Rollrights, *Hancock* / Anomalous gold, *Brower* / Open minds and the argument from ignorance, *Adler* / 200% probability and beyond: The compelling nature of extraordinary claims in the absence of alternative explanations, *McDonald* / Psychic exploitation, *Wiseman* and *Greening* / Is cannibalism a myth?, *Gardner.*

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***SEPTEMBER/OCTOBER 1997** (vol. 21, no. 5): Special Issue:* Alternative Medicine in a Scientific World, *Park, Beyerstein, Sampson, Green, Goodenough, McCutcheon* / The Numerology of Dr. Rashad Khalifa, *Gardner.*

JULY/AUGUST 1997 (vol. 21, no. 4): Special Report: Heaven's Gate, *Kurtz, Gardner, Nickell* / What really happened at Roswell, *Korff* / Amazing free-energy claims of Dennis Lee, *Krieg* / Chiropractic: Science, antiscience, pseudoscience, *Keating* / Secrets of a Russian psychic, *Polidoro.*

MAY/JUNE 1997 (vol. 21, no. 3): Is the sky falling?, *Morrison* / Collective delusions: A skeptic's guide, *Bartholomew* / Scientific reasoning and achievement in a high school English course, *Kral* / Skepticism and politics, *Fagin* / Courtney Brown's 'Cosmic Voyage' into preposterism, *Gardner.*

MARCH/APRIL 1997 (vol. 21, no. 2): The darkened cosmos: A tribute to Carl Sagan / Hale-Bopp comet madness *plus* An astronomer's personal statement on UFOs, *Hale* / Biases of everyday judgment, *Gilovich* / The end of science?, *Schick* / *The Book of Predictions:* 15 years later, *Tuerkheimer and Vyse* / Farrakhan, Cabala, Baha'i, and 19, *Gardner.*

JANUARY/FEBRUARY 1997 (vol. 21, no. 1): *The X-Files* meets the skeptics: Chris Carter takes questions / The significance of the millennium, *Loevinger* / Quantum quackery, *Stenger* / The mysterious placebo, *Dodes* / Bias and Error in children's books, *Wiseman and Jeffreys* / Jean Houston: Guru of human potential, *Gardner.*

NOVEMBER/DECEMBER 1996 (vol. 20, no. 6): A strategy for saving science, *Lederman* / That's entertainment! TV's UFO coverup, *Klass* / Scientific consensus and expert testimony, *Moore* / The Dogon people revisited, *Ortiz de Montellano* / Cosmic menagerie, *Tyson* / Physicist Alan Sokal's hilarious hoax, *Gardner.*

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JULY/AUGUST 1996 (vol. 20, no. 4): Traditional medicine and pseudoscience in China, *Beyerstein and Sampson* / CSICOP at twenty, *Kurtz* / Maria's near-death experience, *Ebbern, Mulligan, and Beyerstein* / Alternative health education and pseudocredentialing, *Raso* / Pentagon grant funds alternative health study, *Selby and Scheiber* / Thomas Edison, Paranormalist, *Gardner.*

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MARCH/APRIL 1996 (vol. 20, no. 2) Science and superstition, *Sagan* / Special report: Evaluation of military's program on psychic spying, *Hyman* / The role of representativeness in erroneous and pseudoscientific beliefs, *Gilovich and Savitsky* / Vampires of folklore and legend, *Barber* / Miracle photos *Nickell* / Claiborne Pell: Senator from outer space, *Gardner.*

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Medicine Wars

I am very surprised that you allowed Barry Seidman ("Medicine Wars," January/February 2001) to claim that Durk Pearson and Sandy Shaw are responsible scientists. They are not. Among other claims, they are if not the originators then at least the promoters of the idea of slimming while you sleep. You take certain amino acids and lo-and-behold miraculously your fat changes overnight into muscle and you lose weight automatically. This in spite of the fact that lean muscle is heavier than fat.

Nevertheless, this idea was used in 1998 and 1999 by an Austrian quack to advertise anonymously but aggressively in major Dutch newspapers with the slogan *"Slank terwijl u slaapt"* (Slim while you sleep). Similar advertisements had appeared in other European countries. They combined the amino acids with mate tea and a fruit-and-vegetable juice and sold it for roughly ten times the normal retail price of the constituents. Efforts of the Dutch, German, and Austrian skeptics to do something against it resulted in an article in the June 2000 issue of the German magazine *Skeptiker* about the ineffectiveness of the laws of the countries involved.

After complaints from the Dutch Advertising Practice Committee (a voluntary organization), the firm quit advertising this particular slimming program and shifted to advertising Pu-Erh tea as a slimming tea and after that they started advertising pyruvate (which they misspelled as pyrofat and then "translated" as fatburning). Since October 1999 we have not seen any more advertisements by this firm, but whether this was due to our efforts or because they had earned enough money in the Dutch market, we do not know.

Of course, Pearson and Shaw cannot be held responsible for the swindling practices of the Austrian firm, only for the *Schlank im Schlaf* idea.

Marie P. Prins
Oost-Souburg, Netherlands

Regarding Barry Seidman's remark that herbal medicines are not patentable: If so, how did we manage to patent aspirin, digitalis and so many other drugs first found in herbs? It would seem to me that the process described in John Allen's article that follows Seidman's is indeed patentable. Can't patent the herb? Patent the extraction process! Each newly discovered beneficial herbal compound will require something in the process that others don't, correct? A slightly different solvent material, a modestly differing distillation procedure. . . .

Is it not more nearly accurate to say that pharmaceutical companies may be reluctant to apply an expensive and difficult process of examination to each and every herbal preparation that's widely touted by a credulous lay public *because* it's so expensive and demanding a task? Given the wild variety of claims made for some of the currently popular drugs, one can easily understand why scientific investigators would and should be cautious.

Some of these herbs are said to cure everything from ataxia to zoophobia! (Now if someone'd just come up with an herb that *really* cures impotence when Viagra no longer works!)

William D. (Bill) Mayers, RT, RN
Canastota, New York

The special issue on "alternative medicine" was long overdue and drew proper attention to the "alternative" nature of the movement which renders it incapable of being real medicine. In particular, and as with all pseudoscience, it draws its strength from misunderstandings, wishful thinking, and outright deception.

One of the prime examples of the last is the 1993 article by David Eisenberg, M.D., and his coauthors in the *New England Journal of Medicine.* Barry Seidman cited this report in his "Medicine Wars" and quoted Wallace Sampson, M.D., editor of the *Scientific Review of Alternative Medicine (SRAM),* as his source for Eisenberg's errors. But he neglected to refer readers to a fuller analysis of the Eisenberg report and the followup survey that appeared in the Fall/Winter 1999 issue (Volume 3, Number 2) of *SRAM.* This is now available, with some revisions, on the Web at www.hcrc.org/contrib/gorski/eisenb.html.

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Your article "Medicine Wars" reported, as usual, on the percentages of people who use alternative medicines and the potential dangers they pose, especially when the physician doesn't know about the patient's usage. In my experience, when the doctor or his/her nurse asks what medications I am taking, I try to enumerate the vitamins and herbs as well. However, they never record them and typically give some indication that that information is irrelevant. Where is the research on: the percentage of doctors asking the patient for this information; doctors' knowledge of the interactions of herbs and medicines; and doctors' informing patients of those interactions?

Are the researchers writing articles in the medical journals urging doctors to inquire about the herbs and vitamins and to record and/or study possible interactions in their patients?

Perhaps in the future we will have some guidance in these matters from the studies now being sponsored by the National Institutes of Health Alternative Medicine program.

Jean M. Alberti, Ph.D.
Lombard, Illinois

Herbal Medicines

John Allen's diatribe against herbal medicines suggests that all herbs, no matter what their history of use, should be presumed dangerous. He leaves the impression that no herb has ever been subjected to chemical, laboratory, or clinical study and found safe. In truth, many have been. By comparison, he would presume a pharmaceutical marketed for five years to be "safer," although benefits are now evaporating and risks emerging for such lucrative drugs as estrogen and calcium channel blockers.

If we should shrink from chamomile tea because it contains "large numbers of chemical compounds," logic would apply

the same fear to the tomato, which is consumed in far greater quantities. Ginger is consumed as a food, stir-fried, candied, or pickled, and nobody worries about it. Yet let a consumer take ginger capsules to alleviate motion sickness or morning sickness, and anti-herb zealots wail that this is a "risky health gamble." One would almost think that the expectation of benefit is a suspected carcinogen.

When dietary supplements have been shown by science, rather than innuendo, to pose a serious risk of harm to normal individuals, the FDA can and will prohibit their sale. Contrary to Allen's claim that toxic aristolochia "can still be readily obtained," it has been banned, along with other species containing aristolochic acid and even plants that could be contaminated with aristolochia.

Wendy L. Applequist, Ph.D.
Missouri Botanical Garden
St. Louis, Missouri

John Allen responds:

My article "Herbal Medicines and Dietary Supplements: A Risky Health Gamble" was intended to point out some potentially serious risks associated with the use of these products that proponents, understandably, do not publicize. I specifically pointed out in my article that there is reputable scientific evidence that the use of some herbal medicines can provide valuable health benefits. However, ingesting herbal medicines and dietary supplements is risky because they are extremely heterogeneous; they may contain almost anything or essentially nothing at all.

Ms. Applequist states, "When dietary supplements have been shown by science rather than innuendo to pose a serious risk of harm to normal individuals, the FDA can and will prohibit their sale." According to this logic, consumers should take comfort in the knowledge that if enough of them swallow a toxic herb and are injured, the FDA will take action to prevent others from suffering the same injury. Aristolochia is a perfect example and illustrates my point; it was banned only after it caused significant injury to a large enough number of consumers. Contrary to Ms. Applequist's assertions, this toxic herb is still available because of the demand for it by gullible consumers who reject the scientific evidence of its toxicity and embrace, instead, a New Age "anything organic is good" superstition. In my view, swallowing substances whose composition and effects are unknown represents behavior that is truly irrational.

Chiropractic

Retired chiropractor Samuel Homola's article in the January/February 2001 issue confirms several beliefs that I have held for years: the majority of chiropractors are quacks who base their practices on a pseudoscientific belief system; a mere handful of them have abrogated quackery; and there isn't anything that even the scientifically oriented ones can do to help backaches that practitioners of a number of other modalities can't do. As Professor William Jarvis and others have often stated, the profession has existed for more than a century without having made a single contribution to the understanding or furthering of human health.

Kurt Youngmann
Northbrook, Illinois

After reading about the misdeeds of chiropractic practice in the SKEPTICAL INQUIRER, I, for one loathe these charlatans. Yes! Neck manipulation is dangerous! My friend used to go to a chiropractor and now he has a permanent discomfort along his vertebrae. From X-rays it appears that the vertebra is splintered and now he must get an operation to correct this injury that I believe the chiropractor made. Of course the chiropractor denies all knowledge of this injury. It amazes me how they persuade people to come in on a lifelong basis for spinal adjustments. They try to convince you that your back hurts and it's all a psychological ploy to get money in their own wallets. I can say only one thing to the readers: don't fall victim to the shady chiropractor!

Paul Dale Roberts
Department of Community Services & Development
Elk Grove, California

Your article on chiropractic by S. Homola concentrates on only the most negative, sensational (but fortunately rare), dangers of manipulation.

One wonders why someone who claims to have spent forty-three years in the field would be so negative about it.

While he quotes dire statistics, it was Terrell who found that many of the reports alleging damage by chiropractors turned out to be provided by other practitioners and lay people. Just a few years back the *L.A. Times* reported a chiropractor caused a stroke in a 32-year-old screenwriter. Days later we found it was caused by a pediatrician.

The *New England Journal of Medicine* reported 106,000 deaths per year from prescription drugs, equivalent to a fully loaded 747 going down every other day. Yet we seem to accept that as reasonable while detractors of chiropractic care like Homola try to convince the public the sky is falling.

If chiropractic care were as dangerous as he would have us believe, malpractice premium costs would make practice prohibitive. My medical doctor friends are envious of my premium, less than $2,000 yearly for coverage of one to three million dollars. That should settle the question of safety instantly, since premiums are based on actual experience, not innuendo and rhetoric.

The answer to the question in the article title is: "Absolutely not, the good part of chiropractic outweigh any bad by many orders of magnitude."

R. Dean Harman, DC
Harman Chiropractic Center
San Mateo, California

After suffering from neck stiffness last year I decided to seek chiropractic treatment for fast relief. My extensive search for a "good" chiropractor yielded a professional with twenty years of experience and, I was told, an excellent medical practice record.

Two weeks into treatment my pain started to dissolve. And to ensure a healthy body he offered to perform, at no extra charge, a series of tests aimed at diagnosing and preventing serious illness that I may incur. His test was simple. Extend my arm forward and firmly resist his attempt to lower my arm using his right hand. During that process he gently applied pressure with the index finger of his left hand on my chest, abs, kidney, etc. If I failed to resist while his index finger is directed at a specific organ, that particular organ is unhealthy. Curing that sick organ is even simpler! In my case I failed to resist when he applied pressure on my stomach. I had a severe ulcer (which I previously indicated on a form I was asked to fill regarding medical history).

He then reached for a neatly organized kit filled with herbal supplements. After carefully selecting a herbal supplement (said to cure ulcer), he asked me to hold it in my left hand and in the meanwhile he would perform the same test again on my stomach. This time I resisted successfully.

With confidence, he explained the before-and-after event as a proof that his designated herbal supplement when carried by the patient "created a magnetic field that

surrounded the body and directed its power to cure the sick organ"!

He asked me to buy his expensive kit and when confronted with skepticism he tried to assure me of the integrity of his product!

As a physicist I did not know whether to laugh or to cry!

Mohammad Ghaffari
Tucson, Arizona

Psychotherapy Research

Because it is likely that readers of the SKEPTICAL INQUIRER are apt to be self-proclaimed skeptics (like me), authors who contribute to the magazine bear a special burden to research their facts and to present them in a balanced fashion. Surely such authors must realize that when they preach to a congregation of skeptics their words will be heard by habitually skeptical ears. Therefore I was amazed to read Margaret Hagen's revisionist history of psychotherapy research, which she trumpets as a "sterling example" of a point she was trying to make about the use of meta-analysis in studying the effects of childhood sexual abuse ("Damaged Goods?" January/February 2001).

Hagen tells us that before 1977 "Decades of research failed to discern any reliable relationship between psychotherapy and the wellbeing of countless patients" (p. 58). She is simply wrong about this. In our widely cited book entitled *Research in Psychotherapy* (1970), Meltzoff and Kornreich reviewed 101 controlled studies on the outcome of psychotherapy. There was no such thing as meta-analysis of therapy studies at that time. We appraised each of these studies individually and reported that 80 percent of them yielded positive results. In the ensuing years many more research studies were published, and supported our conclusions. Yet Hagen tells us that because of the lack of evidence ". . . mental health practitioners turned to meta-analysis to justify their livelihood and reassure their patients" (p. 58). Here she was referring to the early paper by Smith and Glass (1977) on meta-analysis.

Smith, Glass, and Miller's (1980) definitive meta-analysis was published as a book, *The Benefits of Psychotherapy*. They analyzed the results of 475 controlled outcome studies that contained 1,766 effect-size measures. The difference between groups treated by any method and untreated controls averaged 0.85 standard deviation units. This far exceeds the "very small" positive effects that Hagen claims. To place the differences in perspective, Smith, Glass, and Miller (1980) cite studies that report "The differences in achievement caused by decreasing the size of a school classroom from thirty to fifteen children is about 0.15 standard deviation units" (p. 88), and "In elementary school, the effects of nine months of instruction in reading achievement is about 0.67 standard deviation units" (p. 88).

In her zealous attack on the validity of meta-analysis as a research tool, Hagen leaves the reader with the uncorrected false impression that psychotherapy is an unproved commodity with trivial effects. In the 1940s and 1950s graduate students in psychology were smugly taught that with psychotherapy one-third got better, one-third got worse, and one-third remained the same. You can't fault the faculty of those years, because the research did not really begin until the mid-1950s. By the 1970s and 1980s enough good data were available to change the nature of received wisdom on the issue. Today the studies number in the thousands, and informed scholars no longer question the benefits of psychotherapy. It is surprising, therefore, when so many years later, people continue to misrepresent the history of the saga, and to echo what people (who then had reason not to know any better) were saying nearly a half century ago. Old myths die hard!

Julian Meltzoff, Ph.D.

TV-Paranormal Links Questioned

In "Science Indicators 2000" (January/February 2001), the authors claim that ". . . [studies suggest that] the way television presents paranormal subjects does have an effect on what viewers believe." The examples presented simply do not support this rather audacious claim.

The authors cite studies indicating that viewers of programs such as the ever-popular target *The X-Files* are more likely than others to "condone paranormal beliefs," that such stories are more likely to be believed when not properly disclaimed, and that "Some fans of *The X-Files* find the show's storylines 'highly plausible.'" This emphatically does *not* prove that these viewers came by their beliefs merely from watching these shows. People may simply prefer to watch shows that reflect their own previously formed world views.

In fairness, the authors do admit this possibility way down in footnote #10. However, the footnote is rather carefully hedged: "This result could simply mean that people who believe in the paranormal are more likely than others to watch these programs. However, the findings are consistent with the conclusions of earlier studies. . . ." In fact, despite the misleading "however," no number of "earlier studies" with "consistent findings" will dislodge the alternative explanation they present.

Furthermore, we aren't told here whether viewers of other kinds of shows are more or less likely to profess sympathy to paranormal beliefs. Would we turn our ire on, say, *The News Hour with Jim Lehrer* or even *I Love Lucy* if we found that viewers of these programs were also more likely to hold paranormal beliefs (a possibility that is not strictly inconsistent with the studies cited above)? Focusing exclusively on a few "standout" programs that some skeptics may find distasteful skews the results into near-pointlessness.

I submit that the article, as printed in SI, leads readers into a post-hoc fallacy. There's just nothing here to suggest that *The X-Files* or other "paranormal" shows inculcate paranormal beliefs among those who wouldn't otherwise subscribe to them. It might be fair to conclude that television caters to (or even panders to) viewers who've demonstrated paranormal inclinations, but unless we can produce a sizeable population who'd admit to getting their education on such matters exclusively from these shows, the authors simply don't have a case.

Richard C. Conner
Upper Marlboro, Maryland

It was very disappointing to see that your extract from the National Science Board's report on "Belief in the Paranormal or Pseudoscience" itself incorporated one of the most common fallacies of pseudoscience—inferring causation from correlation.

The fact that watchers of programs such as *The X-Files* are more likely to endorse paranormal beliefs tells us nothing about the role of the media in fostering such beliefs. It is just as (if not more) likely that people who endorse paranormal beliefs are more likely to want to watch such programs, as it is that such programs cause them to hold such beliefs.

The proviso that these findings are "tentative and require replication" entirely misses the point. No amount of replication of simple correlations such as this will tell us anything.

Bob Roshier
Durham, England

Driving Out Exorcisms

I enjoyed reading Joe Nickell's excellent commentary on a case of alleged demonic possession and exorcism in 1949 ("Exorcism: Driving Out the Nonsense," January/February 2001). Although Nickell presents strong and compelling arguments that attribute supposed supernatural phenomena to mental disturbances and simple trickery, I think his article would have been enriched by medical observations of more recent cases of alleged spirit possession.

A 1980 report authored by two psychiatrists from Vanderbilt University Medical Center stated that some children who were supposedly possessed by demons exhibited such traits as poor relationships with peers, aggression and/or violent outbursts, sleeping difficulties, and auditory/visual hallucinations. The authors observed many of the same phenomena demonstrated by the subject of the 1949 exorcism, but they attempted psychiatric intervention on their subjects instead of seeking assistance from Roman Catholic priests.

While Nickell mentioned that many early cases of possession were probably due to disorders such as epilepsy or Tourette's syndrome, pharmacology may also play an increasing role in treating alleged demoniacs. I have found one case of alleged spirit possession from Great Britain where a young Indian male was treated with an anti-psychotic drug that apparently succeeded in suppressing possession-related phenomena where repeated exorcism sessions failed.

While the Roman Catholic Church has retooled its policies governing exorcism in the light of modern medical knowledge concerning psychiatric disturbances, I have been investigating an increase in possession claims and exorcisms among charismatic, evangelical Christians in the United States, Great Britain, and other nations. Pastors and counselors who perform such spirit expulsions (often referred to as "deliverance") do not answer to the Vatican, and they are often reluctant to consider medical explanations for what appear to be possession-related phenomena.

I'm concerned that many believers with undiagnosed mental disorders seeking intervention from these practitioners could run the risk of having their illnesses exacerbated, rather than alleviated, by rituals for deliverance or exorcism. It is for the relief of such individuals that skeptical analysis and medical advances should continue to hunt the "demons" that plague them.

Daniel R. Barnett
Vice-President, North Texas Skeptics
Dallas, Texas

References

Hale, A.S., and N.R. Pinninti. 1994. Exorcism-resistant ghost possession treated with clopenthixol. *British Journal of Psychiatry* 165: 386–388.

Schendel, E., and R.C. Kourany. 1980. Cacodemonomania and exorcism in children. *Journal of Clinical Psychiatry* 41(4): 119–123.

The guidelines of 1614 regarding exorcisms were a great step forward out of the morass of magic and superstition which plagued the folklore and popular religion of the time. A good amount of this is still around, and, of course, makes a ready storyline for many a TV program or Hollywood movie. Since that time, the Church has tried to distinguish phenomena with a natural explanation from those which cannot be explained by the best science and medicine of the age. That this has not always been observed in practice, I will readily admit.

Joe Nickell states that it was only in 1999 that the 1614 guidelines were updated. Consider the following:

> 1. "In the first place, the exorcist should not believe too readily a person is obsessed by a demon, but should take note of those signs by which an obsessed person may be distinguished from those laboring under some illness, especially of a psychiatric nature." From the *Roman Ritual*, 1952 edition, my translation.
>
> 2. "(The exorcist) ought to ascertain the signs by which a persons possessed can be distinguished from one who is suffering from melancholy or some other illness. . . ." *Roman Ritual*, 1925 edition, translation of Rev. Philip T. Weller. The word *melancholy* should be understood with the meaning it had in medicine in the early twentieth century.
>
> 3. "Possession is not lightly to be taken for granted. Each cases is to be carefully examined and great caution to be used in distinguishing genuine possession from certain forms of disease." *The Catholic Encyclopedia*, 1909 edition, article "Exorcist" by P.T. Toner. This is Toner's paraphrase of the pertinent material from the Roman Ritual of his day.

Glossolalia is not the same thing as ". . . the ability to speak with some facility in a strange tongue or to understand it when spoken by another," which is one of the criteria in the *Roman Ritual*.

There is much hucksterism associated with many so-called exorcisms, but it does not do good service to enlightenment to muddle the facts.

Rev. Martin Buote
Saint Anne's Rectory
New Bedford, Massachusetts

Joe Nickell replies:

I appreciate Mr. Barnett's praise and the useful comments he has provided. (Space constraints typically force me to focus primarily on the case at hand, allowing only minimal introductory and supplementary material.)

I also appreciate Rev. Buote's comments, but while he seems anxious to quibble I must do likewise. I didn't state that the "only" updating of the exorcism guidelines occurred in 1999; I was citing a revision that was significant enough for the Vatican to call attention to it. As the Associated Press reported, "The novelty appears largely in the cautions offered to exorcists to take psychiatric medicine into account."

And while the phrase "strange tongue" in the ritual is not necessarily the same as "unknown tongue" (glossalalia), it was not I but priests in the 1991 case who were impressed when the "possessed" girl chanted, "Sanka dali. Booga, booga." I am often mindful of the biblical injunction (Matt. 23:24) not to "strain at a gnat, and swallow a camel."

Kiki's Comment

After reading Martin Gardner's "Facilitated Communication: A Cruel Farce" (January/February 2001), I conducted a highly scientific experiment, having been inspired by the sentence, "The facilitator assists him in locating keys she is sure he intents to hit." (What could be more scientific?)

With my characteristic modesty, I assumed the role of the "facilitator" and a readily available subject was Kiki, our jet-black cat.

Eureka! The system worked! It was a "seemingly miraculous breakthrough," to further quote from the article.

Kiki expressed a liking for raw liver, and when asked to sum it up in one word her scholarly opinion of the Crossley-Bilden, etc. claims, Kiki unhesitatingly began to paw out:

BULLS

but unfortunately at this very moment power died and we will never know what Kiki was going to express, as she has lost interest in further tests.

Patrick J. Leonard
Braintree, Massachusetts

(P.S.—I would have Kiki sign but she is in the litter box.)

Why Paranormal Beliefs?

Jeffrey Victor's review of *Paranormal Beliefs: A Sociological Introduction* by Erich Goode (January/February 2001) contained one slightly puzzling statement. Victor suggests that the book "challenge[s] the preconceptions of some skeptics that paranormal beliefs persist due to ignorance, irrational thinking, and inadequate science education." Intrigued, we read further to find the real reasons, and learn that paranormal explanations "are much more dramatic and entertaining than scientific explanations," that they "embody very ancient and enduring symbolism and themes," and that they "support anti-elitist sentiment against the dominance of scientists and scientific belief systems." To me, those all sound like irrational reasons for belief, so where exactly is the promised challenge?

On the other hand, I reluctantly agree with both Victor and Goode that more science education by itself is unlikely to help much.

Paul N. Hilfinger
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Pseudoscience is . . . Fun!

I have been a faithful reader of SKEPTICAL INQUIRER for over a decade and initially became interested because I, as an educated layperson with a background in philosophy, was irritated by many other laypersons who confused pseudoscience with *real* science and failed to understand the differences between them. But the excessive seriousness of the debunkers and my own experience with those who dabble in the pseudosciences has made me want to speak out just a little against the debunkers.

Pseudoscientific activities such as palmistry, graphology, Tarot cards, crystal ball gazing, fortune-telling, psychic readings, astrology, reading horoscopes, and the like, may be viewed as comparable to playing board games like Monopoly, Clue, or checkers. They entail a certain playful relationship with the world, of the kind suggested by Herbert Marcuse in *Eros and Civilization* (1955) and by Theodore Roszack in *The Making of a Counter Culture* (1969). Pseudoscientific activities are really (psychological) arts involving gamesmanship. And this kind of playfulness often seems lost to and forgotten by the hard-nosed scientific types, who take pseudoscience so seriously from being immersed in a strict, rigid skepticism that they feel the need to go to excruciating lengths with scientific methodology in order to debunk them. The people who enjoy these activities generally don't really care if they are true" science or not. Pseudoscience is, for them, simply . . . fun!

Michael Wren
Chicago, Illinois

Entropy and Nature's Laws

I believe that Professor Lambert (Letters, January/February 2001) protests a bit too much in his comments on Zoran Pazameta's earlier article, "Laws of Nature: A Skeptics Guide." It is impossible to discuss the matter, adequately in the compass of a short letter, but I offer the following, along with the admission that it is vastly oversimplified.

Lambert states that entropy is simply an indicator of energy change. Even from the classical point of view this is an understatement. From the classical standpoint the overall change in entropy accompanying a process may be taken as a measure of the capacity for spontaneous change that was lost in the occurrence of the process. In general it is not simply related to the energy change corresponding to real processes. The expansion of helium into a vacuum corresponds to a significant change in entropy but to a trivial change in energy. The reverse can be true for mechanical changes in systems with low friction.

Classical thermodynamics only permitted the evaluation of entropy changes and left open the matter of whether the concept of an absolute value of the entropy of a system had meaning. In the statistical approach, entropy—the same entropy, changes in which are considered in the classical approach—is a measure of the number of ways the constituent particles of a system may be distributed over available microstates without there being any perceptible difference in the measurable macroscopic properties of the system. These microstates may be energy levels or they may be positional.

Given the inapplicability of statistical methods to macroscopic systems, it is true that associating entropy with the disorder of a room can be misleading. If done carefully, however, such an approach provides a useful analogy that can help the neophyte to understand the significance of the seemingly nebulous concept of "thermodynamic probability."

L.F. Koons
Tuskegee, Alabama

Injustice to Kepler

Thaddeus M. Cowan's statement that "the idea that images are an outward projection of the mind through the eyes of observer was first proposed by Johannes Kepler" (Letters, January/February 2001) does Kepler an injustice. According to *Encyclopaedia Britannica*, Kepler observed that every point on a luminous body in the field of vision emits rays of light in all directions, but only those rays enter the eye that impinge on the pupil. The rays are then refracted and meet again at a single point on the retina (15th Edition, vol. 22, page 506). Kepler thereby founded the modern study of vision.

Don Keith
Waterloo, Ontario
Canada

Objection Overruled!

M.L. Howard (Letters, November/December 2000) quibbles with my use of the title "lawyer" in reference to Phillip Johnson (Conference Report on the New Paranatural Paradigm, July/August 2000, p.13). Although he concedes that the title is technically correct, Howard identifies himself as an attorney and worries that he and others of his profession might incur some guilt by association with Johnson. He complains that lawyers have been unfairly portrayed and that my use of the "L" word might in some way contribute to this. He suggests that Johnson be referred to as Professor of Law, as he is not currently practicing law. My report did mention that Johnson was at UC-Berkeley. Since lawyers are trained by law professors (who in many cases are former lawyers, like Johnson), would this change of labeling really provide the remedy Howard seeks?

Donald Mainfort
Minneapolis, Minnesota

Women Skeptics: We're Out Here!

I'm a newcomer to SKEPTICAL INQUIRER and have recently read several back copies, some from 1999, some from 2000. I just

finished the January 2001 issue. A gentleman in one of the older issues I read wanted to know why there aren't more women skeptics "out there."

We're here, and in large numbers. There is the mistaken assumption, at least within the circle of learned readers and contributors to SI whose letters and articles I sampled, that one must have a degree or three to be a "skeptic."

I'm a grocery checker in a conservative small town in Colorado. My friend "K" is a singer in California. "D" works in radio and television here in Colorado. "B" sells real estate in Tucson. "L" upholsters furniture in Houston. We share ideas and trade articles regularly through mail and e-mail concerning the absurd, the "New Age," and the trendy "medical" quackery. None of us has a degree, at least in science or psychology, etc. We are all atheists and skeptics.

And we question. Anything and everything. Mostly, of course, we question the insistence of the "masses" to believe what so obviously is not (cannot be) true. But we question other things as well. Are the tomatoes in that "sundried" tomato quiche really dried in the sun? Or are they dried indoors in dehydrators? Not that it really matters (especially since "roasted" garlic seems to be the big thing now). But if they're really dried in the sun, how is it done? How do they keep contaminants out? Why is "Healing Touch Therapy" called that if the "expert" doesn't really "touch" the client? Shouldn't it be called "Hovering Hands Therapy?" And what, exactly, is it supposed to "heal?" Why do so many continue to believe that the "good old" American diet is good for them? And why, after continuing to consume this diet for decades, do they then insist that their resulting poor health is the will of some unseen supreme being?

Yes, we're out here. We're just vastly outnumbered, that's all. And we tend to keep our opinions to ourselves unless we know we're in safe company.

I personally question SKEPTICAL INQUIRER's seemingly unquestioned loyalty to the AMA (and its "conventional wisdom") and the FDA. While I'm no more a fan of some of the absurd "alternative" medical practices out there than SI, I can at least see that the interests of "Conventional Medicine" do not always lie in the health of the patient.

Sorry, just being a skeptic.

And the FDA? Sure, they *always* have our best interests at heart. . . .

In short, never assume that because more women don't hold lucrative positions in science and math departments at major universities that skeptical women aren't around. We're here, and we question. Trust me.

Maggie Valentine Inskeep
Pagosa Springs, Colorado

Age-Dating Distortions

I recently came across an article in "Answers in Genesis," (*AiG-U.S. Weekly News* 20 January 2001), entitled "Radioactive 'dating' failure," by Andrew Snelling, Ph.D., adjunct professor of geology at the Institute for Creation Research in San Diego. According to his online bio at the Answers in Genesis Web site, Snelling holds a B.S. in Applied Geology from the University of New South Wales in Australia. The bio doesn't mention where he received his Ph.D., and I can find no evidence on the Internet of where he might have received one.

However, after reading his article, I realized that it was a classic example of how creation "scientists" deceive the general public.

In the article, Snelling laid out seemingly convincing evidence that the potassium-argon (K-Ar) dating method scientists use to measure the age of volcanic rock is flawed and wholly unreliable (no pun intended, but it is a good one).

Snelling pointed out that the age of lava flows from several eruptions of New Zealand's Mt. Ngauruhoe were measured by a reputable laboratory, and found to date to 0.27 to 3.5 (± 0.2) million years. According to Snelling, these were the same lava flows that were observed to have been created by eruptions between twenty-five and fifty years ago.

Now, to the uninitiated, this appears to be convincing evidence that scientists are claiming Earth and fossils to be far older than they really are, thus lending evidence for a young Earth which, creationists would have us believe, suggests evidence for the truth of Genesis (illogic noted). But it was not the facts given in the article that deceives, but what was left out.

Snelling never mentions the names of the "researchers" who took the samples. But this is only important to anyone wanting to investigate the scientific credibility and integrity of the team. Most of the time, if names are given, a short Internet search can satisfy the investigation.

Snelling gave a rather simple explanation of how the K-Ar dating method works, but omitted two very important points. First, he failed to mention that the half-life of potassium-40 is known to be 1,300 million years. This fact alone should cause one to suspect its accuracy for dating material twenty-five to fifty years old.

The second omission, and most important, was that the K-Ar dating method is known by scientists to be unreliable for dating volcanic rock laid down less than 500,000 (five hundred *thousand*) years ago, and thus, paleontologists don't use it for dating recent flows, and certainly not flows only twenty-five to fifty years old because there would not be enough argon to measure reliably.

Still, even if the samples did contain such an extraordinary amount of argon-40, it is probable that either the team actually took old samples, or the samples of fresh lava contained inherited argon-40 from the heating of older deposits lying beneath. This has been known to happen. But we can't know any of this from the sketchy information in Snelling's article. For extraordinary claims, one should submit extraordinary evidence.

Of course, Snelling knows that many in the general public, especially true believers, will never think for themselves, but will rely on pseudoscientific reports like his for their "facts."

This is the kind of "science" they want schools to teach our kids!

Ref.: http://answersingenesis.org/home/area/magazines/docs/cenv22n1_dating_failure.asp?srcFrom=aignews

Max T. Furr
Richmond, Virginia

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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Astro-Entomology? Ant-like Space Structure Previews Death of Our Sun

From ground-based telescopes, this cosmic object—the glowing remains of a dying, Sun-like star—resembles the head and thorax of a garden-variety ant. But this dramatic Hubble telescope image of the so-called "ant nebula" (Menzel 3, or Mz3) shows even more detail, revealing the "ant's" body as a pair of fiery lobes protruding from the dying star.

Credit: NASA, ESA and the Hubble Team (STScI/AURA)