Controversies in Science and Fringe Science: From Animals and SETI to Quackery and SHC

We asked Lys Ann Shore, who writes frequently for our News and Comment section, to cover the 1987 conference of the Committee for the Scientific Investigation of Claims of the Paranormal in Pasadena. She contributed these reports.

INVESTIGATING controversial claims in both science and fringe-science was the theme of the 1987 CSICOP conference in Pasadena, California. The meeting attracted a curious, attentive, and outspoken audience of 700 to sessions held on Friday and Saturday, April 3 and 4. Although CSICOP is best known for its investigation of paranormal claims, this conference highlighted a complementary aspect of the committee's work—the promotion of science as the best approach to obtaining knowledge about the world.

The issues examined covered astronomy, behavioral science, and medicine, focusing on the search for extraterrestrial intelligence, animal-language research, and controversial medical practices. In addition, concurrent sessions on Saturday afternoon turned to areas of fringe science and the paranormal—astrology, spontaneous human combustion (SHC), and psychic fraud. The high point of the conference came on Friday night, when the keynote address by astronomer Carl Sagan drew a crowd of 1,500 people.

At the opening session on Friday morning, Caltech president Dr. Marvin Goldberger welcomed CSICOP to Pasadena. "Science is a peculiar business," he said, one in which effects and phenomena can appear mysterious until understood. Be skeptical of new phenomena, he advised the audience; subject them to rigorous examination; and keep an open mind.

Paul Kurtz, CSICOP founder and chairman, then briefly explained the meeting's theme, pointing out that a scientific controversy can't be labeled pseudoscientific without examination. "We can't claim to be the judge. The entire scientific community has to do that," he said. Kurtz introduced CSICOP Executive Director Mark Plummer, who emphasized the committee's growing international reach. The SKEPTICAL INQUIRER, he said, now goes to readers in 52 countries; the conference itself drew people "from Vancouver to Mexico and from Boston to Florida." In fact CSICOP can now be seen as a large, international consumer protection organization, Plummer said, "making people skeptical about fraud." He urged, however, that the local skeptics groups exercise caution and prudence in their activities to avoid being seen as vigilante groups.

Saturday's schedule included an optional lunch hosted by magician James Randi. In an informal postprandial talk, interspersed with his well-known escape tricks, Randi spoke "not as a magician but as a founding member of CSICOP." He expressed concern about college students today, who are not always taught how to examine evidence and form a rational decision on the basis of the evidence.

Randi also presented his annual Bent Spoon Awards: a Media Award to ABC-TV for airing "Out on a Limb," Shirley MacLaine's odyssey into mysticism; a Funding Award (for the largest amount of money given for the silliest purposes) to Jerry Collins for his $1.3

CSICOP awardees Gell-Mann and Sagan are congratulated by Kurtz.

million donation to TV evangelist Oral Roberts; and a Performer Award to trance-channeler J. Z. Knight for her portrayal of the 35,000-year-old character "Ramtha."

Mark Plummer then took the stage with a fund-raising appeal, contrasting the fees of paranormalists to those of CSICOP: "A modest fee, for what we offer," Plummer said.

At the CSICOP Awards Banquet, held Saturday evening in the ballroom of the Pasadena Hilton, CSICOP Fellow Carl Sagan received the In Praise of Reason Award. Caltech physicist and Nobel laureate Murray Gell-Mann, also a CSICOP Fellow, was honored with the Frontiers of Science and Technology Award. Responsibility in Journalism awards were presented to three journalists: *Los Angeles Times* editorial writer Lee Dembart, Texas radio talk-show host Ed Busch, and Australian journalist Michael Willesee.

Entertainment at the banquet was provided by comedians/magicians Penn & Teller, who staged a spellbinding show of New Wave magic and comedy, with a little help from "assistant" Murray Gell-Mann.

The Southern California Skeptics served as local support for the conference, facilitating arrangements and providing the many volunteers who helped the conference run smoothly. They also enlivened the banquet with a large self-propelled Mylar UFO that rotated majestically as it sailed about the ballroom, bearing on its side the message, "Phil Klass, Where Are You?"

Keynoter Carl Sagan Takes Up 'Burden of Skepticism'

EVERY AREA of life, from buying a used car to evaluating Star Wars defense schemes, calls for "an exquisite balance between two conflicting needs: the most skeptical scrutiny of all hypotheses . . . and openness to new ideas," said astronomer Carl Sagan in his keynote address. (See p. 38, this issue) Speaking to an attentive and appreciative crowd in the elaborately decorated Auditorium Theater of the Pasadena Center, Sagan ranged from TV commercials to trance-channeling, extraterrestrial intelligence, and Star Wars to show the need for skepticism in daily life. Just as many television commercials betray "a real contempt for the intelligence of the listening audience," so do U.S. arguments for nuclear-weapons testing. There are people in government "who think Americans will buy any English sentence as long as it parses," Sagan said.

Sagan views skepticism and openness to new concepts as complementary attitudes. "If you're only skeptical, no new ideas make it through to you," he pointed out. But if you're altogether open and have no skeptical sense you won't be able to evaluate them. Sagan praised the scientific ethic of rigorous criticism of new ideas.

Why isn't the American public more skeptical of claims by corporations and

Gell-Mann receives Frontiers of Science Award from James Alcock.

government officials—not to mention trance-channelers and other proponents of the paranormal? Part of the answer lies in the cruelty of truth, Sagan believes. "We may find delusion more consoling," for example, when we're offered the opportunity to communicate with loved ones who have died. But when we recognize we're vulnerable because of our own desires, we must be more on guard than ever, Sagan maintained.

But the attraction of illusion isn't solely responsible for people's credulity. "Skepticism is dangerous," Sagan said. "That's exactly its function in my view." Children taught to be skeptical might not stop with TV commercials; instead, they might start challenging accepted ideas and institutions.

Recalling that afternoon's sessions on the search for extraterrestrial intelligence (SETI) and animal language, Sagan pointed out the predispositions that lie as undercurrents to these debates. For example, both issues involve the belief of humans in their own uniqueness—the "anti-Copernican conceit." As soon as we find extraterrestrial intelligence, "the last remnant of that conceit is gone." In evaluating claims made in these controversial areas, it helps to keep in mind how science operates: Science demands independent confirmation of results and the willingness to wait until the evidence is in before drawing a conclusion. "It's okay *not* to know," Sagan said.

Medical Controversies

Standing in front of a "Quackbusters" logo, moderator Wallace Sampson, M.D., started the "Medical Controversies" session by emphasizing the huge volume of pseudoscientific medical claims facing CSICOP's Paranormal Health Claims Subcommittee: "Not everyone sees a UFO or has a psychic experience, but everyone gets ill." He pointed to the loaded terminology of alternative medicine—"false dichotomies" like orthodox/unorthodox, traditional/untraditional, toxic/nontoxic, reductionist/holistic. "Propaganda words," he called them.

The session began with a statement by Dr. Leonard Savage, representing the American Chiropractic Association. Shortly before the session began, the ACA requested time to comment on "Chiropractic Medicine," by William Jarvis, the first scheduled talk on the morning's program. Commenting that he had asked to *respond* to Jarvis's talk rather than precede it, Savage went on to emphasize the accreditation of chiropractic colleges and the respectability of "mainstream" chiropractic medicine. Chiropractors don't need outsiders telling them how to run their profession, he said: "What's needed is not hostility, arrogance, or conflict, but to all work together for the good of the patient."

Jarvis, a professor of health education at Loma Linda University who wrote his doctoral dissertation on chiropractic, described chiropractic as "not so much paranormal as nonscientific or antiscientific." He traced its conceptual

origins to nineteenth-century ideas of vitalism and said its historical beginnings under the aegis of D. D. Palmer fit the dictionary definition of a medical cult. Jarvis discussed the current rift within the chiropractic profession between "straights" (those who limit their practice to spinal manipulation) and "mixers" (those who use other therapies in addition to manipulation). "I believe it's a mistake to view chiropractic monolithically," he said.

This failure to establish criteria of practice is the greatest flaw of the chiropractic profession, Jarvis believes. He pointed out that chiropractic does not show up well when evaluated for consistency of diagnosis. In response to Savage, Jarvis said, "I disagree completely with the idea that people from outside the profession shouldn't look into chiropractic. That's the nature of the scientific method." (See also Jarvis's article on chiropractic in this issue.)

Then philosopher Austen G. Clark, an assistant professor at the University of Tulsa, examined two premises and two conclusions that underlie the concept of holistic medicine. The premises are that all diseases are caused by mental states and that traditional medicine takes a dualistic approach to treatment, separating mind from body. Proponents of holism thus conclude that traditional medicine is inadequate to treat psychosomatic disease (in their view, nearly all disease) and that holistic medicine is the appropriate approach to treatment.

How many types of medical quacks are out there? Jerry P. Lewis, M.D., of the University of California, Sacramento, recognizes three: dumb, deluded, and dishonest. He defines them as follows: a *dumb quack* is a simple person who thinks he's found the answer; a *deluded quack* is someone who is qualified but becomes enamored of a particular unproved treatment; and a *dishonest quack* is someone who promotes a treatment that he knows to be ineffective.

Lewis said quacks are recognizable by their use of lay publications as authorities and by their attacks on medicine, their endorsement of a single therapy, and their focus on subjective evaluations of the effectiveness of a therapy. Presenting a rogues' gallery of cancer quackery, including bizarre machines and wacky diets, Lewis recommended that doctors discuss quack treatments "up front" with their patients: "We should encourage patients to take responsibility for their own care, and we should be prepared to answer the claims of quacks."

Hypnosis, Astrology, and 'SHC'

The choice wasn't easy: To hear about hypnosis or spontaneous human combustion? To investigate psychic fraud or astrology? But the audience had to choose one from each pair of Saturday afternoon concurrent sessions. The sessions were a first in CSICOP conference programming, an effort to pack as much information as possible into the two-day conference.

Spontaneous Human Combustion: Joe Nickell, a technical writing instructor at the University of Kentucky, Lexington, effectively debunked the gruesome notion of spontaneous human combustion (SHC), which first gained notoriety in the early 1950s. In fact, as Nickell pointed out, the earliest reported cases date from the eighteenth century, and the term *spontaneous human combustion* was coined in the nineteenth. The majority of cases, Nickell said, involve elderly women, living alone, who had a history of alcoholism. (See Nickell's article, "Incredible Cremations," *SI*, Summer 1987.)

Reviewing case histories, Nickell

Gell-Mann laughs at Sagan remark at banquet.

pointed out several other similarities among them, including the report of a residual grease spot; the generally incomplete combustion of the body; and the charring—but not burning—of the room in which the combustion occurs. The basic fallacy in SHC is the notion that extraordinary heat is required to reduce a human body to ashes (as in a crematorium), and of course this would have to have a catastrophic effect on the surroundings. But in the majority of reported cases, several hours were available for the body to burn at a much lower temperature. If combustion occurs slowly, the clothing and the body provide "all the heat and fuel you need."

After careful investigation, Nickell concluded that SHC does not exist. All known cases can be explained by "gruesome but normal" means. "There's no need to invoke the paranormal."

Hypnosis: "Hypnosis is both more dramatic and less mysterious than most people think," said Joseph Barber, of the Department of Psychiatry at the University of California, Los Angeles. He defined hypnotism as a condition, usually induced by a hypnotist, that creates in the subject a marked susceptibility to suggestion and has the capacity to alter perception.

Hypnosis was once seen as something paranormal, magical, or mystical, but research in recent decades has shown that it is amenable to scientific investigation. In Barber's view, "what's important about hypnosis isn't that you can create such phenomena but rather that you can create so many of them so well, in so short a period of time. And you can do it systematically."

The neurophysiology of hypnosis is not yet understood, Barber said. He discussed the widely accepted "neo-dissociation" theory of Ernest Hilgard: that hypnosis is a psychological process that allows a person to have multiple simultaneous levels of consciousness.

Although Barber's audience may have been expecting him to perform a demonstration, he didn't—and explained his reasons. "The real interest of hypnosis is *internal*," he said, comparing a public demonstration of hypnosis to demonstrating dreaming by bringing someone

up on stage to go to sleep. "You wouldn't be able to see them doing the work of hypnosis."

What about stage acts of hypnosis? "Stage hypnosis is not hypnosis," said Barber flatly. "What stage hypnosis does is demonstrate how peculiarly people will behave if given a good excuse."

Barber dismissed forensic hypnosis, pointing out that "there is very little evidence that hypnosis can improve memory. The hypnotized person is likely to come up with an additional piece of information, but the information is apt to be wrong—and yet the person will most likely have great confidence in the accuracy of the recollection."

Randi, Sagan share an after-banquet moment.

Astrology: "Are clients of astrologers satisfied because astrology works, or for other reasons?" asked Ivan Kelly, a psychology professor at the University of Saskatchewan and chairman of CSICOP's Astrology Subcommittee. If you ask astrologers for evidence of their success, they'll usually cite testimonials. "Birth charts are nonjudgmental, results are nonfalsifiable, and most astrologers are very nice people," Kelly pointed out. Thus astrology may very well work, if by "work" you mean "be helpful," and its success would owe more to "personal validation" than to astrological theory.

Kelly listed 20 nonastrological factors that enter into the "personal validation" of astrology, including: Barnum statements (general statements interpreted specifically by individuals), placebo effects, hindsight bias, cold-reading effects, rapport effects, social desirability effects, and projection effects (finding meaning where none exists).

Comparing astrology to phrenology, Kelly pointed out several similarities. Both focus on personal development and personal characteristics; both are based on theories expressed authoritatively although lacking experimental evidence. In both cases, clients could see for themselves that the system worked. And later practitioners of phrenology, like today's astrologers, tended to view the system as spiritual rather than scientific. Yet, "in spite of everything, phrenology was wrong," said Kelly. "So why shouldn't we conclude for the same reasons that astrology is wrong?"

Psychic Fraud: This session turned out to be far more narrow in scope. Detective Patrick Riley of the Los Angeles Police Department's bunco-forgery squad told of LAPD's efforts to combat fortune-telling shops. "Fronts for swindle," he called them. The fortune tellers are typically women, often from families of fortune tellers. They set up temporary store-front shops, lure in the gullible, find ways to make off with their money, and disappear. A typical gambit is to appear to withdraw a foreign object from an egg or a tomato and thereby convince the victims that they are cursed. Money can

withdraw the curse. Another is to persuade the innocent that their money is cursed. If they bring it in, the fortune teller will be all too willing to exchange the afflicted currency for uncursed bills. The money is exchanged, but the wad of bills returned contains only shredded paper in the center. "It's the oldest scam in the world."

Riley lamented the loss of the Los Angeles fortune-telling ordinance passed in the 1920s, which provided some law enforcement leeway. The State Supreme Court threw it out in 1985. The fortune-tellers are now harder to catch than ever, he said. He called for a return to the wisdom of the former law, "that no one can predict the future."

Extraterrestrial Intelligence: What Are the Probabilities?

Astronomer Frank Drake, dean of natural sciences at the University of California, Santa Cruz, led off the opening session of the conference by asking why *the search for extraterrestrial intelligence* (SETI) should be on the program. "Those of us involved know the search for extraterrestrial intelligence is mainline science that needs no second-guessing about its worthwhileness," he said. But Drake acknowledged that SETI is a good example of a "truly scientific" activity that when improperly presented can look like pseudoscience.

SETI follows scientific methodology, Drake pointed out. "We assume the simplest explanation, even if it doesn't seem that way." The best answer to the question of why anyone would think there could be life in outer space is simply, "Why not?" "The development of life required nothing special," Drake said, "no freak phenomenon or one-time event." It follows that there should be "a great deal of life out there in the universe."

How difficult will it be to find extraterrestrial life, if it does exist? "In SETI, you can't know how hard the search is until you've succeeded," Drake said, pointing out that there is—and should be—controversy over how the search should be conducted and what kinds of evidence should be sought. "But there shouldn't be, and isn't, controversy over whether such life is likely to exist," he said firmly.

Drake mentioned an argument that has been used to challenge his view of the prevalence of extraterrestrial life: the notion of colonization. "If only one civilization chooses to colonize, by some calculations they should have come to Earth by now; so, since they haven't, we must be alone." Drake offered several counter-arguments to this view. First, citing Carl Sagan, he suggested that colonization could follow a random-walk pattern: "They're not here yet, but maybe soon." Second, there could be impediments to space travel that we don't yet know of (*the "iron basketball" argument*). *Third*, extraterrestrial visitors might already be here, unknown to us. Fourth—the view that Drake himself espouses—"Maybe colonization isn't something an intelligent civilization would do, in terms of a cost/benefit analysis that would balance the energy cost of colonization against the cost of providing a good life for folks at home."

A somewhat different view was expressed by astronomer Robert Rood of the University of Virginia, Charlottesville, who has debated Drake before. Although he acknowledged that "you can't prove extraterrestrial civilizations don't exist," Rood compared them to unicorns: "They're both very plausible animals." Referring to the medieval legend that unicorns could only be captured by

SETI panelists Tarter, Drake, Hibbs, Lee Nisbet (CSICOP), and Rood take questions from audience.

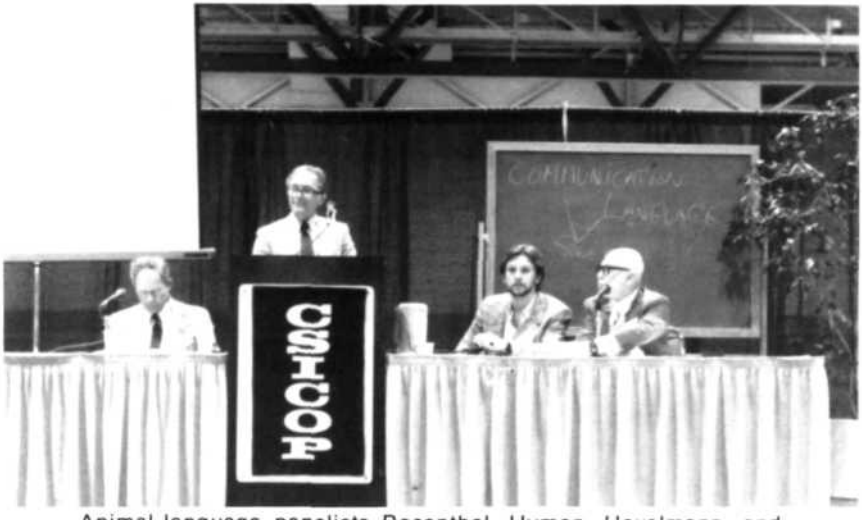
virgins, Rood argued, "If you put a virgin out, wait, and no unicorn shows up, all you can conclude is that unicorns don't like virgins. So you've learned something about the habits of unicorns, but nothing about their existence. What was in it for the unicorn? I ask the same question about extraterrestrial civilizations."

Rood believes that human beings will find space a technologically fruitful, and profitable, environment. "We won't be able to grow much more on Earth, but in space we can expand by factors of billions." Energy is abundant in space, he pointed out. Furthermore, space is a benign environment for technology, even though it's hostile to life. The surface of a planet, he said, is an extremely hostile environment to technology.

It will prove easier to adapt life forms to space, Rood said, than to adapt technology to a planetary surface. According to a unit of measurement that Rood helped devise—*total wattage intercepted: terrestrial* (TWIT)—Earth today is "a milli-TWIT society, whereas in space we could be a mega-TWIT society just by controlling one asteroid." In Rood's view, it's "almost inevitable" that extraterrestrial civilizations would go as far as space stations. Whether they would continue their penetration of space to colonize other planets, however, is another question. "Using Drake's figures, out of 40 million civilizations, if just one had colonized, they would have been here at the time of the dinosaurs," Rood said. "So perhaps we could be a fluke."

Research astronomer Jill Tarter of the SETI Institute at the University of California, Berkeley, in the past ten years has done more observations in the SETI program than anyone else. She said SETI isn't looking for unicorns. "We're looking for something that we know very well exists: evidence of technology like the evidence that our technology itself produces." The goal of the SETI program funded by the National Aeronautics and Space Administration (NASA) is to search for signs of extraterrestrial life by using the larger radio telescopes to search for radio signals.

Tarter compared SETI to "a nine-plus dimensional haystack in which you're searching for the needle." The dimensions



Photos for CSICOP by L. E. Thompson

Animal-language panelists Rosenthal, Hyman, Hovelmann, and Sebeok.

that must be searched through include: three spatial dimensions; time; frequency; polarization; transmitted power; bandwidth; and modulation.

In 27 years of searching, 48 searches have been made from seven countries, mostly in radio wavelengths. These represent tens of thousands of hours of observations, Tarter said. Yet "none of this has found anything that is reproducible or believable."

The NASA program is one of several that are currently under way. According to Tarter, NASA's approach to the SETI problem involves:

1. Large-scale spectrum analyzers that can handle tens of millions of channels.

2. A bimodal strategy of all-sky observations and selected solar-type stars.

3. Automated detection and recognition of astrophysical signals, with an automated check for interfering signals, that can search two polarizations simultaneously.

Tarter described the current technology for the SETI program as "near optimum." This is a good reason, she said, for the search to be pursued now. She believes an even more potent argument is that increasing radio frequency interference is making ground-based searches increasingly more difficult to perform.

As evidence of the SETI program's capabilities, Tarter noted that it has already detected a signal from more than 3 billion miles away. Instead of an extraterrestrial signal, however, the find turned out to be "our most extraterrestrial projection"—Pioneer 10.

Animal Language: Fact or Illusion?

NO SESSION at the conference provoked more discussion than the symposium on animal language. Thomas Sebeok, professor of linguistics at Indiana University, Bloomington, began by expressing disappointment that none of the proponents of animal language who had been invited to participate in the session had accepted.

Sebeok pointed out that the concept

of animal language covers a spectrum ranging from "generally accepted to less accepted." Communication is fundamental to animal life, and animals communicate perfectly well nonverbally. To clarify discussion, Sebeok distinguished "communication," which has always existed, from "language," which humans developed about 3 million years ago, and "speech," which "exapted" from language about 100,000 years ago. Why did it take so long for speech to come out of language? Speech involves the intersection of two different capacities: first, the vocal cords and speech structure; second, hearing. "That this is not perfect is obvious from the fact that most people don't understand what other people are saying, and the truth of that will be seen in the question-and-answer session," Sebeok quipped.

Sebeok himself first became interested in claims of animal speech when he was asked to write a review of the literature on the subject. After reading the literature and visiting all the laboratories that would permit him to visit, he came to the conclusion that the results were not scientifically valid: "They were not reproducible." Sebeok noted, by the way, that "many labs will tell you the animals won't perform when you're there"—a claim he felt would sound familiar to the CSICOP audience.

Criticism from himself and others "caused a storm" in the field of animal-language research, Sebeok said. "Some of the major players simply announced they had quit the field." Federal funding for animal-language research dried up, he said, and reputable journals stopped publishing articles on it "and even, regrettably, have stopped refereeing them."

Recently, however, animal-language research has shown signs of resurfacing under a new name: "animal intelligence." Sebeok mentioned a new series from a major university press on "animal intelligence." "The first title in the series is *Ape Language*" he said. Sebeok calls terms like *animal intelligence* "weasel words." "If there's one word that's slipperier even than *language,* it's *intelligence,*" he says.

Calling the debate over the definition of "language" as applied to animal-language research "largely futile," Gerd Hövelmann of the University of Marburg, West Germany, compared today's animal-language research with past efforts. He noted that contemporary ape-language research is "almost entirely an American phenomenon" and can be traced to tests of the linguistic abilities of domestic animals—pigs, horses, donkeys, and dogs—that were conducted between 1900 and 1933. When early experiments are compared with more recent experiments, Hövelmann said, the comparison shows that the early tests were almost wholly uncontrolled. "Today's methods are hardly superior to those applied in the old research," he said. "Many of the same fallacies still exist."

Reviewing the notorious Clever Hans case, Hövelmann explained the "Clever Hans fallacy": regarding the animal as a message source rather than as a reflection of a message sent by the human involved. Ape-language researchers claim that Clever Hans effects have been ruled out, at least in some experiments. But in fact, Hövelmann said, none even comes close to doing so. Ruling out Clever Hans effects would mean complete isolation of the animal from any perception or contact with the researcher. Researchers also claim that they control the verbal and nonverbal signals they transmit to the animals. However, "these signals are almost impossible to control voluntarily," said Hövelmann.

Further parallels between early and contemporary research include *experi-*

menter expectancy effects; shortcomings in data recording, selection, and reduction; immunizing strategies, including an "inexhaustible" variety of excuses and rationalizations.

The final speaker of the session, social psychologist Robert Rosenthal of Harvard University, described himself as one who "studies the behavior of those who study behavior." The problems that plague animal-language research, he said, are the same problems that affect the work of all those who study behavior.

Rosenthal identified two classes of experimeter effects in behavioral research: those that affect the subject, and those that don't. For example, the interaction between the experimenter and the subject will influence how the subject performs. Experimenter effects with no direct effect on the subject nonetheless affect the outcome of the experiment. For example, "observer effects" influence how the experimenter views the experiment; they tend to "favor the theory of the theoretician," Rosenthal said. "Interpreter effects" come into play as the experimenter endeavors to understand the data obtained.

To avoid such effects as far as possible, Rosenthal emphasized the importance of running behavioral experiments blind and even double-blind. Because experimenter effects can be very subtle, it's not realistic for experimenters to believe or claim—as in the case of some animal-language researchers, as Hövelmann had pointed out—that they can control the signals they send to their experimental subjects.

The question period following these talks extended the range of discussion even further, to dolphins and even to plants. Responding to a question about dolphin research being conducted in Hawaii, Sebeok replied that this also is "open to the Clever Hans effect." Asked about the relative intelligence of various species, he said flatly: "There's no way to compare intelligence. The notion of 'intelligence' is too vague."

Moderator Ray Hyman wound up the session by concluding, "The question of animal language is so difficult that we don't even know if human beings can speak."

In Conclusion

The sense of intellectual adventure that has characterized past CSICOP conferences was fully in evidence at the Pasadena meeting. The choice of theme and topics emphasized the continuity between science, fringe science, and pseudoscience, as one shades into the next with no clear line of demarcation.

Nearly everyone's intellectual comfort was disturbed at some point, and I know I wasn't alone in my initial surprise that the results of animal-language research should be open to serious question. The conference programming served as a reminder that critical evaluation is not as straightforward an activity as it seems: The appropriate and effective response to claims of, say, trance-channeling will of necessity differ from criticism of scientific research well within or just outside the boundaries of mainstream science. Yet the umbrella of scientific respectability should not be permitted to shelter fringe science from critical showers.

By forcing the reexamination of the comforting belief in clearcut distinctions between "legitimate" scientific research and pseudoscience, the 1987 conference program served an important purpose. After all, the essence of skepticism lies in the willingness not just to examine one's beliefs but to make the examination a continuing and open-ended process.

—Lys Ann Shore

Trance-Channelers Challenged to Tests: Public Urged to Be Cautious About Claims

The following statement on trance-channeling was issued by CSICOP at a news conference in Pasadena, California, April 3, 1987, during the annual CSICOP conference.

THE EXECUTIVE COUNCIL of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) is disturbed by the rapid rise of the latest New Age fad of "trance-channeling."

Recent polls indicate that a considerable segment of the American population believes that it is possible "to have contact with the dead." In a report published in *American Health* magazine (January/February 1987), one poll found that 42 percent of the adult population now claims to have had contact with dead persons, as compared to 27 percent in 1973. The figure is 67 percent for widows. Trance-channeling no doubt contributes to this attitude.

We submit that trance-channeling is nothing more than a chic renaming of what used to be known as "spiritualism."

The spiritualist movement was launched in 1848 when two sisters from upstate New York, Margaret and Kate Fox, claimed that they were able to "communicate with the dead." Through a series of rapping noises, the "spirits from beyond" gave advice, made predictions, and consoled loved ones. The Fox sisters went on tour and performed in large arenas, charging clients for the opportunity to communicate with spirits. Within a few months of the Fox sisters' beginnings, thousands of mediums around the world were claiming the ability to communicate with the dead. Years later, Maggie Fox admitted that she and her sister had been perpetrating a hoax.

The movement they created continued. By the mid-1920s, however, the scientific community had thoroughly discredited Eusapia Palladino, Margery Crandon, and other "mediums" who had been duping an unsuspecting public.

Although spiritualism had been on the decline in North America, it has now reemerged as "trance-channeling." Included among the well-known trance-channelers is J. Z. Knight, who claims that a 35,000-year-old man named "Ramtha" uses her body to speak words of wisdom. Actress Shirley MacLaine's use of channelers to gain information about her "past lives" has led to wide public acceptance of this practice.

The Executive Council of CSICOP finds it surprising that trance-channelers have been allowed to make uncorroborated and unverified claims, charge people hundreds or thousands of dollars for public and private audiences, and offer them advice on business and personal matters without providing evidence that they indeed have contact with discarnate beings. Many people have been misled by such practices.

We challenge trance-channelers to offer proof of their abilities. The Executive Council of CSICOP is

making a public offer to provide the services of scientific inquirers to test, under controlled laboratory conditions, the claims of trance-channelers.

We suggest that the public be extremely cautious about these claims unless and until they are corroborated by carefully controlled scientific testing.

• *Associated Press science writer Lee Siegel contacted J. Z. Knight's office for comment about the CSICOP statement. In a reply issued by spokesman Les Sinclair, Knight said: "Isn't it wonderful we have a society which allows us freedom of speech, movement, ideas, and beliefs." She also said it was "wonderful" that skeptics "can attain national media attention which allows them fame and glory. God bless them." This nonresponse failed to mention the challenge to submit her claimed abilities to scientific testing.*

Tests of Holy Cloth Shrouded in Mystery

This statement concerning tests on the Shroud of Turin was issued by CSICOP at its news conference in Pasadena, April 3, 1987, during the CSICOP annual conference. The documents referred to were distributed but are not included here. Copies are available from the CSICOP office.

IN 1983, THE VATICAN inherited the Shroud of Turin, when its owner, the exiled King Umberto of Italy, died. For a time the Vatican continued to prohibit radiocarbon dating of the cloth. But late in 1986 came the headline: "Pope Allows Tests on Shroud of Turin." The story arose out of a communiqué issued by the Archbishop of Turin on October 4 (Document A). It said several laboratories around the world would be involved in the tests. The communiqué also said that the Pope had given his approval for the tests.

The Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) believes that the seven laboratories involved are:

United States: University of Rochester; University of Arizona; Brookhaven National Laboratory, Upton, New York
France: CNRS-CEA
United Kingdom: The Radiocarbon Accelerator Unit at Oxford University; U.K. Atomic Energy Authority's Harwell Laboratory
Switzerland: ETH, Zurich

The *Harwell Bulletin* of October 31, 1986, gave some details of the tests (Document B).

However, Professor Harry Gove, of the University of Rochester, has said: "Permission to proceed has not yet been given by the Vatican."

CSICOP has written several letters to the Vatican and the Archbishop of Turin [seeking assurances about the research protocols], but none has been answered (Documents C-G).

The Archbishop's communiqué also states that the "results of these tests will be made known by Easter 1988." The choice of the date suggests a religious

orientation to the testing. Scientists do not time the release of test results to commemorate religious holidays.

There is world interest in the testing of the Shroud. It is therefore important that the testing procedure be objective, accurate, and beyond reproach. It is in the interest of all parties that there be no dispute about the methodology of the tests after the release of the test results.

CSICOP is concerned with the scientific procedures to be used. Only skimpy details are available in a letter from Dr. Hedges, Director of the Radiocarbon Accelerator Unit at Oxford.

CSICOP believes collection of specimens from the Shroud should be done by disinterested parties in front of independent neutral observers to positively ensure the authenticity of the samples. A chain of evidence must be maintained, double-blind procedures scrupulously followed.

A chain of evidence involves a verifiable secure history of the movement of samples from the time of taking them from the Shroud to the testing. The chain must be secure so that no doubt can be thrown on the final result.

CSICOP urges that the collection of Shroud samples and suitable control specimens, the keying of same, and the custody of the key to the identities of the specimens be performed by disinterested persons, specifically, that church authorities and such groups as the Shroud of Turin Research Project (STURP) and the Association of Scholars and Scientists International for the Shroud of Turin (ASSIST), as well as skeptical groups, be kept from direct involvement.

We recommend that such groups as STURP, ASSIST, and CSICOP have representatives present to observe the collection and transmittal of samples. It is important that a complete protocol be made public well in advance of any such collection of samples and be publicly scrutinized to ensure objectivity before implementation. If this is not done there will always be doubts about the tightness of the chain of evidence and the methodology and protocol of the testing. Given the controversy about past activities and doubts about the methodology and objectivity of some past researchers, it is essential that the dating tests be handled in a scrupulously objective manner.

The tests must be conducted fairly and competently. •

Editor's note: The British scientific journal Nature *published a letter relevant to the above concerns in its June 11, 1987, issue (327:456). The letter was from M. S. Tite, Research Laboratory, British Museum, London. It responded to an earlier published letter (327:10, May 7, 1987) by Denis Dutton, University of Canterbury, New Zealand (and chairman of the New Zealand Skeptics), in which Dutton had raised exactly the same questions contained in the CSICOP statement above and mentioned his and CSICOP's inability to elicit satisfactory answers about plans to protect against tampering. Here is Tite's response, in part: "I wish to assure Denis Dutton that all the institutions involved in the proposed radiocarbon dating of the Shroud of Turin are fully aware of the crucial need to ensure that the 'chain of evidence' remains unbroken. It was to meet this need*

that the British Museum accepted the invitation to act as 'guarantor' and independent observer. The purpose of the meeting in Turin last autumn was to devise procedures for every step of the sampling and testing . . . to preclude any possibility of tampering with the samples. These procedural steps have yet to be finally agreed by the Pontifical Academy of Sciences and the Archbishopric of Turin so I am not at liberty to divulge their details. But, I can reassure Dutton that should the proposed procedures be amended to introduce a possibility of tampering with the samples, the British Museum would decline to act as a certifying institution. Nor would the radiocarbon dating laboratories then necessarily be willing to participate in the project."

—K.F.

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