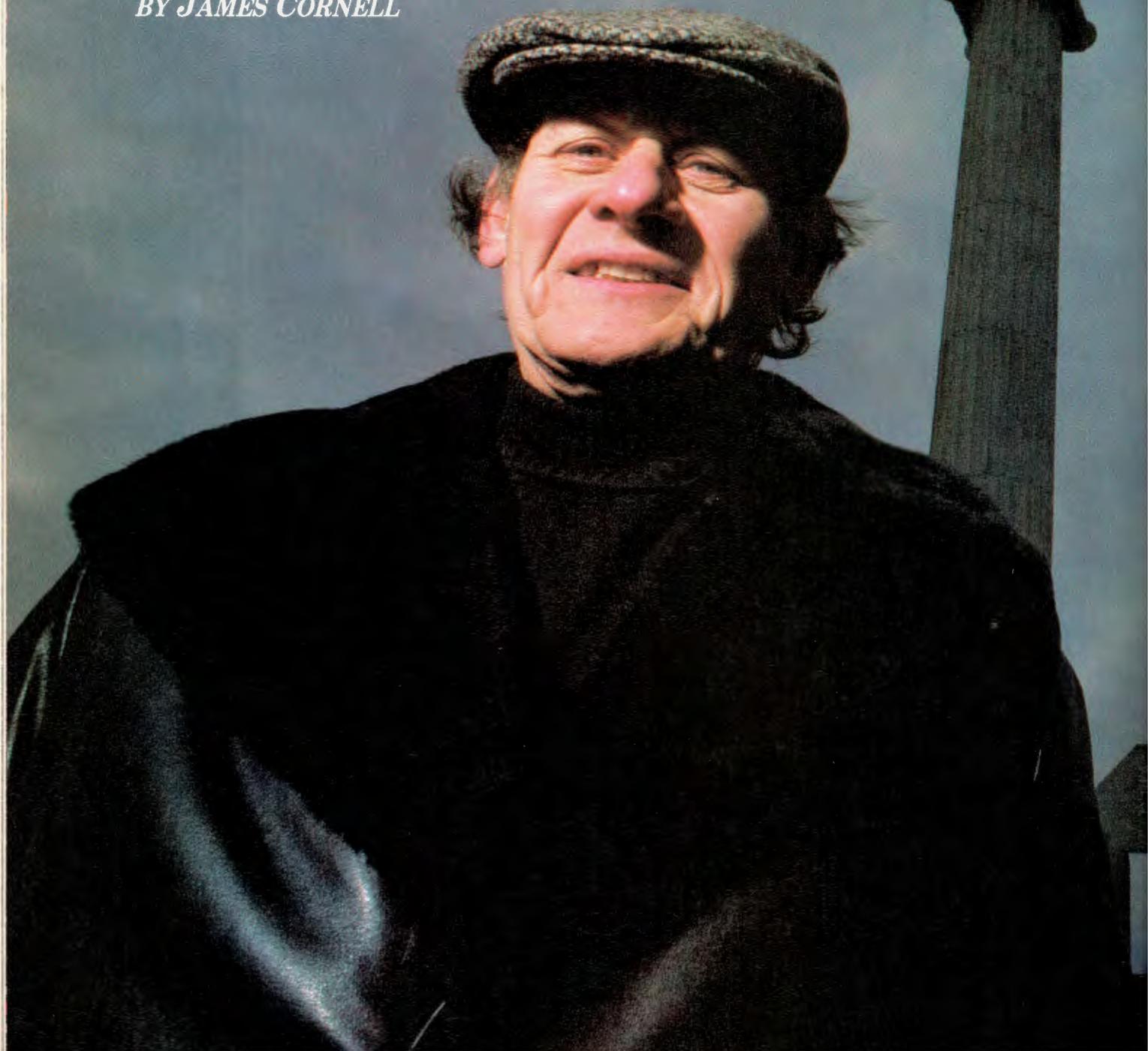


Science vs. the Paranormal

*SKEPTICS FIGHT AN UPHILL BATTLE
IN THEIR EFFORTS TO OVERTHROW
THE FORCES OF PSEUDOSCIENCE.*

BY JAMES CORNELL





Ours may be an age of reason—or at least high-tech reducibility—but belief in the irrational, the occult and the supernatural

seems almost as persistent and pervasive today as it was in the Middle Ages. Indeed, thanks to the wonders of mass communications, public exposure to claims made for paranormal phenomena may be more widespread than in any previous era.

“On the current world scene, belief in the paranormal is fed and reinforced by a vast media industry that profits from it, and it has been transformed into a folk religion, perhaps the dominant one today,” says Paul Kurtz, professor of philosophy at the State University of New York at Buffalo.

Kurtz, editor of *Free Inquiry*, is the founder of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), a loose organization of psychologists, physical scientists, journalists and concerned citizens. At a recent international conference, CSICOP members, most avowed skeptics, examined the apparent paradox of psychic spoon-benders, faith healers and poltergeists surviving—even thriving—side by side with Atari addicts, biotechnicians and space scientists. They also

Paul Kurtz: “People need to know that biorhythms haven’t been tested, that the moon does not lead to madness, that you can’t match sun signs with picking your mate and that there has been no evidence of a UFO base in the Bermuda Triangle.”

PHOTOGRAPH BY ROE DI BONA

attempted to assess the current state of popular delusions and their own efforts to counter the more outlandish beliefs.

Overall, the scorecard of the skeptics looks bad. Reports from Mexico, Holland, Australia, Canada and elsewhere confirm that public acceptance of clairvoyance, precognition, telepathy, psychokinesis, levitation and UFO's is still as strong as ever—and, with only slight national variations, still reported extensively and uncritically by the popular press.

Ironically, Kurtz points out, the persistence and growth of ancient beliefs may be due in part to the fast pace of sci-tech progress itself. "Present-day science seems to demonstrate that virtually anything is possible. So people ask why is it not possible for the mind to engage in remote viewing of distant events and scenes, precognate or retrocognate, or exist in some form separate from the body? Unfortunately, there is confusion between the possible and the actual. For many people, the fact that something is possible converts it into the actual."

When compared with conventional research, of course, some disciplines are easily identified as pseudosciences because they lack methods, systematics or theories. ("Has anyone heard of the First Law of Clairvoyance, or the Second Law of Telepathy or the Third Law of Psychokinesis?" asks Mario Bunge of McGill University.)

More important, parapsychologists and proponents of the paranormal are hard pressed to produce any incontrovertible examples of their phenomena. This is true despite efforts by devoted and often quite sincere researchers as well as recent attempts to link parapsychological claims with quantum mechanics to explain the apparent leaps over constraints of time and space.

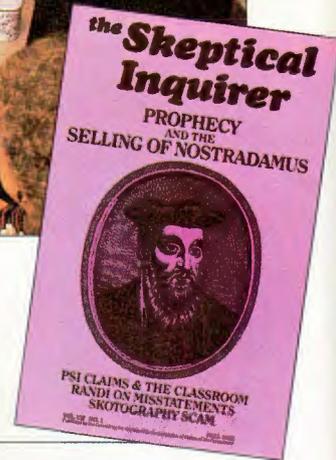
"The past seven years [since the founding of CSICOP] have been no kinder to those seeking compelling evidence about the reality of paranormal phenomena than were the previous 70," says psychologist James Alcock of York University in Toronto. "The long-sought, reliably demonstrable, psychic phenomenon is just as elusive as it has always been."

While parapsychologists have failed to prove their case, the community of skeptics has provided ample evidence of how supposed supernatural, or psi,



ROE DI BONA

Kurtz and members of his committee map out their strategy; The Skeptical Inquirer, which reports on studies of UFO sightings, astrology and other forms of psi phenomena, is one of their weapons.



phenomena can be explained as the result of sloppy experimental procedures, misinterpretation or ignorance of data and pure trickery.

For example, James (The Amazing) Randi, a professional magician whose personal crusade to debunk psychics has included the public unmasking of Uri Geller, recently planted two conjurers in the McDonnell Laboratory for Psychological Research at Washington University in St. Louis. Skilled in sleight-of-hand spoon-bending, mind-reading, and "psychic photography," the two young men gulled the researchers into a euphoria of scientific success, until Randi called a press conference to reveal the two "natural psychics" as nothing more than talented tricksters.

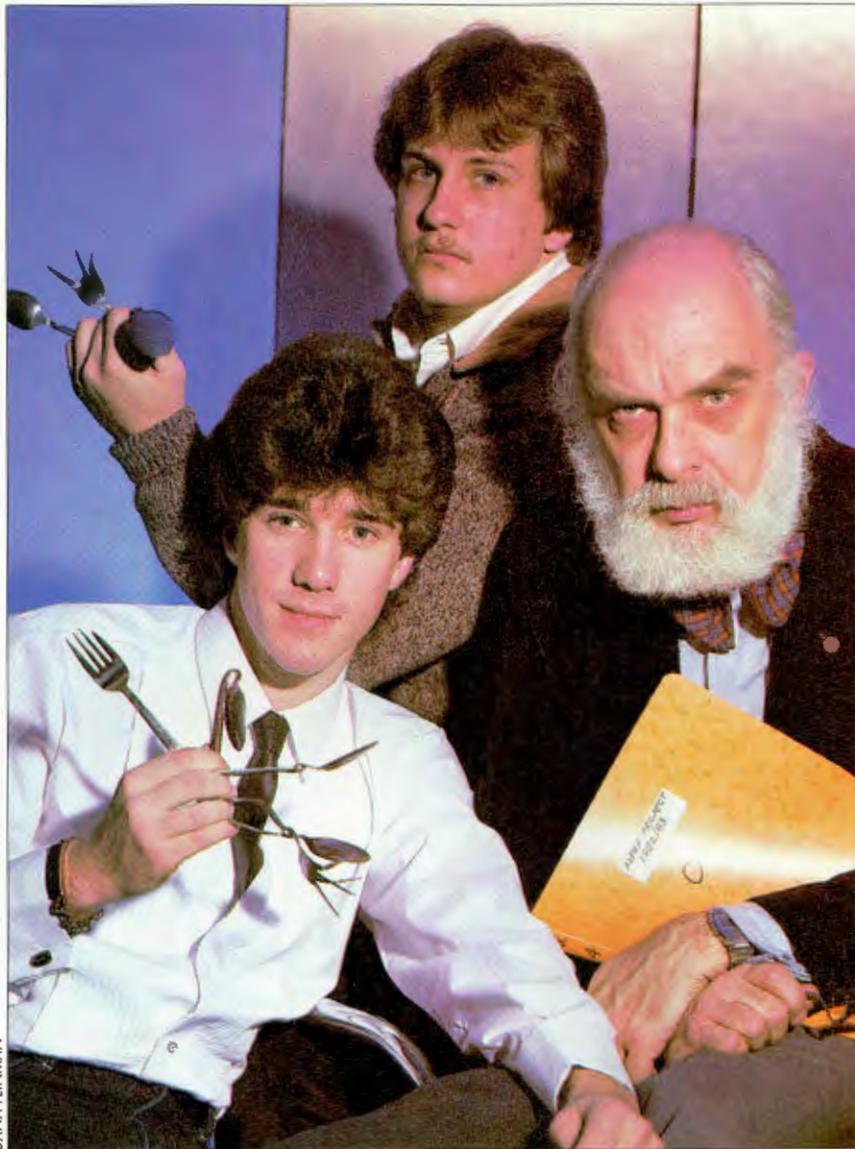
Another debunking was accomplished by retired FBI agent Kenneth M. Rommel Jr., who conducted a year-long investigation of the mysterious cattle mutilations that plagued the Rocky Mountain states in the 1970s. Although variously attributed to secret government conspiracies or the work of extraterrestrial beings, the removal of cattle tongues, ears and sexual organs with supposedly "surgical precision" was found by Rommel to be nothing more than the result of wild scavengers gnawing away at the soft

tissues of livestock that had died of natural causes.

And Daryl Bem, a professor of psychology at Cornell who is also an amateur "psychic entertainer," provides a vivid demonstration of how such performers can convince an audience it is in the presence of a truly powerful force. By successfully "reading minds" and determining the exact contents of a sealed box, Bem—even while disclaiming any psychic powers—shows how people are led to accept such standard tricks as evidence of paranormal power (see Page 32).

One thing that underlies the willingness to believe in ESP, precognition and prophecy, even in the face of disproof, is the human difficulty in sorting out chance events from the multitude of experiences in daily life. "Humans have a hard time differentiating random from nonrandom events," explains psychologist Lee Ross of Stanford University. "Therefore, the real world never looks 'random' enough to be considered truly random. When the randomness of life produces natural coincidences, they appear to be causal events."

According to Ross, one reason humans so readily accept precognition or predetermination is that "lots of events—coincidences, chance meet-



DANA FEINMAN

Two psychic ringers, working with the Amazing Randi, fooled the ESP pros.

HAS ANYONE HEARD OF THE FIRST LAW OF CLAIRVOYANCE, OR THE SECOND LAW OF TELEPATHY OR THE THIRD LAW OF PSYCHOKINESIS?

effects of these beliefs can be lethal," Jarvis says. "When one is not cured by the ritualistic health cure, the sense of loss and dependency is multiplied. One can be devastated by the failure of the ritual."

A still darker side of certain irrational beliefs has been documented by California psychologist Lowell Streiker. He has noted a rising incidence of child abuse—and deaths—among the offspring of Christian fundamentalist sect members. In these sects, the physical discipline of children, and equally damaging, the withholding from them of medication or treatment, are consciously performed as a manifestation of God's will.

"All too often the sect leaders, who are themselves child abusers, institutionalize their own weakness as a norm for behavior vis-à-vis children and women," Streiker says. "In groups with such leaders, the beating of the powerless is engaged in, methodically and deliberately, often while the entire group stands by as witnesses, offering acceptance and support."

Although the sadistic sect leader is an extreme example, the role of religion in fostering paranormal beliefs among the general public cannot be ignored. "It is a short jump from a belief in God to a belief in the supernatural and the paranormal," psychologist Ross says. "Since we have no direct evidence for the existence of God, we must look to the world around us for His signs. The ESP proponents say the same thing: The examples of this power are around us in the world."

Is there any hope of changing public acceptance of paranormal claims? Skeptics will continue to challenge the more blatant examples, but, if experi-

(CONTINUED ON PAGE 34)

ings with friends in unusual places, the apparent reappearance of similar numbers or identical birthdays—sound highly improbable only because we don't have sufficient data to determine their true probability."

The persistence of belief in the paranormal, however, is not as troublesome as the pernicious effects of these beliefs on society. Although a casual interest in palmistry, UFO's or horoscopes may seem a benign diversion, Kurtz and others warn of far-reaching consequences.

One consequence is economic—millions of dollars are spent on casting horoscopes, purchasing fad foods and pursuing dubious diets and vitamin

regimens. Parapsychology also exists at the expense of serious science: Gresham's Law applies to paranormal beliefs, so that bad science, such as creationism or astral projection, drives out good science—or at least muddles it in the public mind.

Even more dangerous, some paranormal beliefs, especially those involving personal health, can lead to real physical and psychological dangers. As William Jarvis of the California Council Against Health Fraud points out, the psychological damage of quacks and faith healers can be "the promotion of dependency behavior and the weakening of one's self-image. . . . In fact, the cumulative psychological

PSYCHOLOGY AND THE MILLENNIUM



COVER PICTURES

In less than two decades, most people alive today will experience something only witnessed once before in modern history—the coming of the millennium.

Will the turning of the year 2000 have the same impact on society as did the approach of the year 1000? Medieval records are scanty, but historians have noted a rise in religious fervor around that date and particularly near A.D. 1033, the supposed 1000-year anniversary of the crucifixion of Jesus. Belief in the Second Coming and impending Judgment Day also may have given impetus to the Crusades.

The modern signals are mixed, but specialists in religious cults see a significant rise in contemporary millenarian thought.

Lowell Streiker, a California psychologist who counsels people with relatives involved in extremist sects, has seen the majority of his clients gradually change from those involved with the major urban, white-collar cults of the '70s—Scientologists, Moonies and Hari Krishna chanters—to those associated with the more fundamentalist, charismatic and deliverance Christian sects previously linked with blue-collar, backwoods America.

Traditionally, millenarian cults attracted “have-nots”—the culturally and economically dispossessed—who welcomed the end of the world because they had so little to lose. “Today, the membership of fundamentalist groups seems to be

shifting from the ‘have-nots’ to the ‘haves’—people who have education but no jobs, entrepreneurs who are not making it and others from mainline society who are being left behind by subtle shifts in the economy,” Streiker says.

“As general pessimism increases, more and more people feel they have no stake in this world,” he adds. “Indeed, millenarian thought seems to flourish not when things are bad but when people perceive them as getting worse.”

Many of the more extreme groups think God has temporarily stopped the world’s countdown to destruction, and that when the clock starts running again, there will be only seven years to the end.

Popular belief in a doomsday scenario may be more widespread than realized. Last October 29, the Associated Press quoted President Reagan as telling the executive director of the American-Israeli Public Affairs Committee, just days before the massacre of Marines in Beirut, that: “You know, I turn back to your ancient prophets in the Old Testament and the signs foretelling Armageddon. [Actually, Armageddon is not prophesized until Revelation 16:16 of the New Testament.] And I find myself wondering if we’re the generation that’s going to see that come about.”

The White House press office had no comment on the President’s thoughts about the millennium.

—J.C.

(CONTINUED FROM PAGE 31)

ence is any guide, the beliefs will persist and perhaps increase.

Even so, when a Philippine faith healer claims to cure cancer by miraculously plucking tumors from the body without surgery, or an Israeli psychic claims to stop clocks with brain waves, a SWAT team of skeptics from CSICOP stands ready to challenge, test and, if necessary, debunk the claims.

The tactical attack force image may be a bit extreme, but members of CSICOP often see themselves as guardians of reason, doing battle against the purveyors of superstition, irrationality and the supernatural.

Although CSICOP professes “not to reject claims on a priori grounds, antecedent to inquiry,” its critics charge it with being too quick to dismiss unconventional points of view simply because they don’t fit prevailing scientific thought. And the sometimes heavy-handed debunking methods, although usually proved correct, both rankle paranormal proponents and trouble even some serious skeptics concerned with the ethics and efficacy of intellectual overkill.

“Virtually everything CSICOP does creates controversy,” Kurtz admits. “We have been bitterly attacked by paranormal newspapers and magazines (such as *Fate*) at the same time these publications purvey misinformation to the public and sell everything from crystal balls to ouija boards.

“We believe both debunking and scientific examination should be done,” Kurtz argues. “Take horoscopes, tarot cards, palmistry and other paranormal beliefs into the laboratory to see if you get results. If you can’t, then the only response often is to debunk them.”

But, he concludes, “A major task we face is proper education in science, both in the schools and for the general public. We need to stress the importance of skeptical thinking. A truly educated person should come to appreciate the tentative nature of most human knowledge—and that the burden of proof always rests on the claimant.”

James Cornell is publications manager for the Harvard-Smithsonian Center for Astrophysics and author of several popular science books, including The First Stargazers (Scribners).

Daryl Bem is a conjurer, a charlatan and a con man. He is also a psychologist.

If that description sounds like a contradiction in terms—or a slander—be advised that Bem admits to all the charges.

Professor of social and personality psychology at Cornell University, author of a widely cited theory of self-perception and member in good standing of the American Psychological Association, Bem is also a dues-paying member in the P.E.A., I.B.M. and S.A.M.—the Psychic Entertainers Association, the International Brotherhood of Magicians and the Society of American Magicians.

For more than two decades, Bem has used the tricks of his one trade, that of Dunninger and Houdini, to underscore the principles of his other, that of Skinner and Erikson.

Several generations of undergraduates in Bem's introductory psychology courses have been awed by his remarkable displays of apparent clairvoyance, precognition and telepathy—only to be disillusioned by a post-performance debriefing explaining that all the supposed psi effects were produced by professional trickery.

Bem's highly entertaining mentalist act makes serious educational points: In a section on methodology, it underlines the need for rigid experimental controls; in classes on attitude change, it demonstrates techniques of persuasion; and, in general, it debunks blatant and unsubstantiated claims of ESP.

"I am interested in how psychic entertainers use simple principles of persuasion to convince us we are witnessing paranormal behavior, and how we can be led to accept such demonstrations as evidence," Bem says.

On stage, Bem the entertainer is so skillful that he can easily persuade the most hidebound skeptic. He usually begins his class act with a truly stunning feat: identifying the contents of a sealed box. A preselected student brings to class a shoe box filled with objects of a personal or

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sentimental nature, selected from the memorabilia of her life. (Bem usually asks for female volunteers. "Men are too uptight about making fools of themselves," he says. "Women also tend to be more facially expressive.")

Bem assures the class that no one knows what's in the box other than the person who filled it, and that he has had no prior discussion about the contents. Both statements are true. After some preliminary banter that reveals supposedly "unknown" facts about the participant, he proceeds to describe the objects one by one, in the most minute and exact detail. The trick is spectacular, and so is the effect on the class.

At this point, according to Bem's past testing, 95 percent of the class believe that they have seen a demonstration of paranormal ability. For the better part of the next hour, Bem runs through a standard repertoire of other classic mentalist tricks. He correctly guesses the suits and numbers of cards held close to the volunteers' collective vests. He selects an IBM class registration card "at random" from a fishbowl and, from the number alone, spiels off a description of the student. And, as a finale, he uses "telepathy" to duplicate a drawing previously done in secret by a student.

The order of Bem's presentation is important. The "serial effect" makes the impact of the boffo opening increase acceptance of all that follows,

thus strengthening belief in his psi powers. Then Bem drops his bomb: He announces that all the supposed paranormal phenomena have been tricks—pure and simple.

When he first began these psychic demonstrations, his post-show debriefing included a detailed explanation of one trick as proof that all were false. For example, the IBM card-reading was shown as a straight con job. Bem certainly selected a card at random, but, since he was the one who "read off" the number, he actually recited the registration number of another student selected in advance—and thoroughly researched with the help of a roommate accomplice.

This original debriefing procedure had an interesting result, according to Bem. While students recognized the explained demonstration as a trick, approximately 70 to 80 percent still believed the other demonstrations that were not exposed to be true examples of ESP. Now, Bem tells the class: "Everything you have seen has been the result of a trick that could have been duplicated by a clever magician. Not only have I seen it done before—now so have you."

Despite this disclaimer, a follow-up questionnaire distributed later reveals that only about 10 percent of the students who believed in ESP before the demonstration have changed their minds.

The reasons are complex. In part they stem from Bem's adherence to the magician's unwritten law of protecting professional secrets: "What I have exposed does not precisely explain what I have done." The deeper reasons, however, may lie in the human tendency to persevere in beliefs long after they have been discredited, a phenomenon described by psychologist Lee Ross, a colleague at Stanford where Bem is spending the current academic year.

"The acceptance of the paranormal in the absence of compelling scientific evidence is the result of neither irrationality nor gullibility," Bem says. "Rather it is a normal by-product of

DOES HIS MAGICAL THING



JOHN HARDING

Psychologist-mentalist Daryl Bem confounds, convinces and then deflates his students.

everyday information-processing strategies that usually serve us well." We simplify a complex world by inventing causal relationships to explain observed phenomena and then seek out, recall and interpret data in a manner that sustains belief in their explanation. This strategy works fine, except when the explanation was irrational to begin with.

"The psychic entertainer has another real advantage," Bem says. "Everyone in our society knows magic is a trick, but ESP remains an open question." (In fact, Bem describes himself as an "agnostic" on the question of ESP; and, even in his debriefing procedure, he seldom takes the hard-line, no-quarter stance of the most fervid debunkers.)

His own act seems most successful

when presented before relatively sophisticated audiences—college students, physical scientists, business executives—people who think they cannot be gulled. "We all look for a single, overall hypothesis to explain what we have seen," notes Bem, "but the good mentalist uses multiple approaches to achieve a single effect." The successful mentalist also must anticipate and counter the arguments or plausible explanations reached by the audience and then misdirect them again with a new bit of skulduggery. "Because I am a psychologist," Bem says, "I usually know just about when the audience will ask a question."

Bem, who began doing magic tricks in grammar school and went professional during high school and

college, respects the ethics of his second trade, and, thus, won't reveal the details of his trickery. (He explains the IBM card-reading scam only because "even magicians consider it a cheap swindle.") Still, some mentalists resent his classroom debriefings, claiming that they poison the well for future performers.

Even Bem admits to feeling some conflict between his dual personas as psychology professor and stage performer. "Actually, I have become a lousy entertainer," he says, somewhat ruefully. "I put on a great show, right up to the debriefing, then the audience is a bit deflated. They are not angry or hurt, just mildly depressed. Let's say I don't leave them rolling in the aisles."

—J.C.