# Believing in ESP: Effects of Dehoaxing

Scot Morris

I believed in ESP. I was a teenager and had read one of those "Incredible Tales" paperbacks, and I believed. A patient teacher pointed out the fallacies and flimsy evidence on which I was basing this belief, and I began to wonder. Then there was a newspaper story about a poltergeist—very exciting and mysterious. I believed, and tried to convince others, until two weeks later when I read in a follow-up story that the boy confessed to fooling his parents and the investigators "for a little excitement."

The experience was embarrassing, but it taught me a valuable lesson—that I could be fooled. I was determined not to be fooled again. I am convinced that the best way to develop a healthy skepticism toward the many incredible tales one hears in life is not to go about disbelieving everything blindly, but first to *believe*, with all one's heart, and then suddenly and dramatically be disabused of the idea. The lesson, like a pie in the face, is never forgotten.

In a lab session of Introductory Psychology that I taught at Southern Illinois University, part of the course curriculum was to teach students some principles of scientific method so that they could learn to evaluate any kind of evidence—"Incredible Tales" books, technical experiments, TV commercials, and personal experiences—and be able to see whether someone's conclusions are warranted or not.

In most classes there was a keen interest in ESP. The majority of students did not believe in it but were curious; a few had come to believe after studying about it or after an intense personal experience. But a surprising number believed in ESP because of an article in the Sunday supplement or an impressive stage telepathy act. This was discouraging. It seemed that students could be convinced so easily that they apparently made no effort to come up with counterexplanations. Many apparently found it easier to believe in ESP than to admit that they couldn't explain something or that they could be fooled. With the help of some fellow

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psychology instructors, I worked out an exercise and lecture that I hoped would teach the students to be more critical and selective in deciding on all their beliefs—from the existence of ESP, to the validity of an experiment, to the efficiency of the latest commercial "miracle ingredient."

## ESP in Front of Their Eyes

My colleague Steve Werk came to class as a visiting lecturer for the first hour of a lab session. I introduced him as an expert in ESP who had just returned from Duke University. He talked about the different forms of ESP, then went through a pack of Zener cards to see if anyone could score better than chance in guessing the symbols—star, circle, square, cross, and wavy lines. Steve then began an "ESP demonstration."

His first feat was to receive a number between 1 and 20 that the class had decided upon while he was out of the room. He then spoke of a friend with whom he had developed an especially strong ESP bond. His friend was at home, Steve said, but was expecting a long-distance telepathic communication sometime during the hour.

Steve had a student volunteer pick a card from a standard deck—the two of clubs, let us say. He then selected three volunteers—to assure there were no accomplices—and told them to go call his friend from the public phone. "Call 755-8472 and ask for Mr. Black," he said. "Tell him you are in the ESP experiment with me and ask what card we have selected. He'll know what you mean." Steve wrote the name and number on a slip of paper, gave them a dime, and they left the room. He asked for quiet, closed his eyes, and held his fingertips to his brow.

A few moments later the excited students returned: "*He got it! He got it! The two of clubs!*"

In the final demonstration Steve distributed a half-dozen sheets of paper, with envelopes, to six students in different parts of the room. "Write a question on the paper," he said, "a question about the future. Show your question to the people sitting near you so there can be no dishonesty." Each student then folded his paper, placed it in the envelope, and sealed it. I collected the six envelopes and gave them to Steve. He asked for silence, picked up the top envelope and pressed it against his forehead. He closed his eyes. "I see this is a question about sports. Yes... it's a question about basketball. Someone wants to know whether we will win the regional championship."

The student who had written that question let out a gasp. I asked him whether Steve's wording was correct; it was. The students looked at each other in amazement. Steve opened the envelope to verify the question and answered it: "Yes, we will win," he said, or "No, we won't," or whatever

came to his mind. Since the questions were about the future he was free to improvise.

After extemporizing about the basketball tournament, he held the second envelope to his forehead. "I see... it's a question about scholarship and... numbers," he said. "Someone wants to know: 'Will I keep my four-point average?'" Another student gasped.

At the end of the envelope demonstration the first lab hour was about over, so I thanked Steve and he left.

This was our ESP demonstration. In the next couple of years we became so fascinated with its effects that we repeated it to over a half-dozen different classes, and once to a Student Activity Club audience of about 150 persons.

Of course it was all a hoax. The demonstrations were well-known parlor tricks. In the first trick, I was the accomplice. My helpful "Ready now, Steve?" or "OK, are you ready?" was a code phrase that told him the number. In the long-distance telepathy feat the accomplice was another psychology instructor, Paul Fox. When he got a call for *Mr. Black*, he knew the card was the two of clubs. The first letter meant *two* (since *B* is the second letter of the alphabet), and the last letter, *k*, meant *clubs* (because *clubs* starts with a *k*-sound). Had the card been the four of diamonds, the students would have been told to ask for *Mr. David.* Steve and Paul, of course, had practiced the code in advance so that Steve could think up a plausible name within a few seconds of seeing any card in the deck.

In the last demonstration, one of the students in class was the accomplice. He wrote a prearranged question on his paper—for example, "Will we win the basketball tournament?" When I collected the envelopes, I made sure the accomplice's was on the bottom of the pile. Steve had no idea what was in the top envelope—until he read it while pretending to verify the wording of the basketball question. He noted the question, "Will I keep my four-point average?" and pretended to receive it from the second envelope.

The three parlor tricks were frighteningly impressive. During all our classroom demonstrations, no student ever doubted that he had seen real ESP—at least not out loud.

## "I have something to tell you..."

I always dehoaxed the students during the next lab hour or the next class meeting. I would start by asking for a show of hands—how many now believed in ESP, or had their beliefs strengthened by Steve's demonstration? It was almost embarrassing. Usually about 80 percent raised their hands. I asked them to keep their hands up while I wrote some figures on

the board: A = ace, B = 2, C = 3, etc. It was the code for the telephone trick. I explained how the name *Black* had carried all the information our accomplice had needed to guess the two of clubs.

The students looked disappointed and embarrassed. Slowly, sheepishly, they began to lower their hands.

"Everything you saw in the demonstration was a hoax," I said. "You were fooled. Steve and the man who answered the phone are friends of mine who teach in other classes. Now, why did we—your friendly psychology instructors—do this to you? Because we wanted you to see how easy it is to believe something that's not true; how readily you will jump to a false conclusion when you want to believe it and can't think of any other explanation. The envelope demonstration was a trick too; but I'm not going to say how it was done, because I want you to experience the feeling that, even though you can't explain something, that doesn't make it supernatural. Why not just say, 'I don't know how it was done,' and leave it at that? We tricked you because we want you to think about the way you reach conclusions and the type of evidence you accept as proof of something."

I followed the dehoaxing with a skeptical lecture about ESP. It was admittedly one-sided, because I felt the students had already seen many pro-ESP accounts in popular magazines and paperbacks. I made the lecture as powerful and persuasive as possible, because it reflected my own beliefs at the time and because we later wanted to measure the effects of the lecture (and, separately, the dehoaxing experience and the ESP demonstration) on students' belief in ESP and other controversial issues.

## The Lecture

There is room here only to sketch the outlines of the anti-ESP lecture. It lasted about 50 minutes and consisted of four major sections, the first three corresponding to the major types of "proof" people cite when explaining why they believe in ESP.

*Stage ESP.* I pointed out that ESP research has generally shown that if the phenomenon exists it is an elusive, long-run, slightly-above-chance sort of thing. No serious believer would dare to announce, "Ladies and gentlemen, I will now guess the next card correctly." In short, if it's done on stage or by appointment, there's a trick to it. Several secrets of professional mind-readers were revealed, including "cold reading," the artificially inflated "hit rate," use of accomplices and codes, safe predictions, researched predictions, self-fulfilling predictions, and the *post hoc* selection of events to "fit" previous predictions.

*Personal experience.* "My Aunt Gertie had a dream and it came true."

Perhaps. But is she remembering selectively, or embellishing the tale ever so slightly for the sake of a good story? And how many dreams didn't come true? Personal experiences, first- or second-hand, can be very persuasive, but they always beg the hidden question, "What is the probability of this coincidence happening by chance?" The question is often unanswerable in principle because of the vagaries of human perception, memory, and subconscious "editing," especially during stress. It would be wonderful if someone kept a record of all the failures—but imagine calling the features editor at the newspaper to report, "The dog next door started howling at 1:20 last night. Not much else happened—its master didn't die or anything—but I thought you ought to know."

*Laboratory studies.* This section examined pitfalls in some scientific research, including the tales of Clever Hans and Lady Wonder (a telepathic horse investigated by J. B. Rhine); the claims that ESP doesn't work well when experimental controls are tightened or in the presence of skeptics; publishers' and researchers' selectivity in reporting the most encouraging results; statistical problems with "the decline effect," "psi-missing," and the multiple reanalysis of random data until significant "above chance" patterns are found. Examples from C. E. M. Hansel's *ESP: A Scientific Approach* showed how classic "definitive" ESP studies could have been fudged, and, though this doesn't prove fraud was used, it does mean that such experiments should not be considered conclusive.

*If ESP exists...* Finally, I asked the class to assume that ESP does exist, and then to explain why, after so many years of research, it has not shown itself when it had the chance. One might expect the power to make more appearances in situations of strong motivation and emotion than in simple digit-guessing tasks. But, then, why do Las Vegas casinos continue to operate, year after year, always showing the expected amount of profit? When TV shows and magazines have offered cars and cash prizes to anyone who could receive a secret message, why has no one won? Does materialism inhibit the natural gift of ESP? Then, when Charles Lindbergh's baby was kidnapped and its whereabouts was a national obsession in 1932, why did none of the 1,300 dream reports solicited by the Harvard Psychology Clinic even come close to identifying the baby's true whereabouts?

In conclusion, I said, it is difficult to say definitely that ESP does or does not exist, but the "evidence," when examined very closely, does not turn out to be very compelling.

## Measuring the Effects

The lecture above, along with the ESP demonstration and the dehoaxing

(telling the students they had been hoaxed and explaining why it was done) took about two hours of class time. Some warned that deceiving the students would only teach them to distrust the instructors and the rest of the introductory course. This didn't seem to happen. Several students began to ask for advice and opinions about other controversial issues; several previously quiet students showed new interest in the class and began to enter into discussions for the first time; and many volunteered that it was the most enjoyable, instructive lesson of the year.

But were our theatrics having any effect on students' beliefs? Before we took a second class through the experience, we constructed a questionnaire. To assess students' beliefs in ESP, we included statements about each of five types of ESP (telepathy, clairvoyance, precognition, psychokinesis, and predictive-telepathic dreams), and a sixth about ESP in general:

**ESP Items**

ESP exists. (ESP)

Some people, by telepathy, can tell what another person is thinking. (telepathy)

Some people's dreams enable them to know about unseen events or the future. (dreams)

Some people have mental powers such that they can be aware of events taking place at a distance from them. (clairvoyance)

Some people have mental powers enabling them to tell the future. (precognition)

Some people can influence the roll of dice by concentration. (psychokinesis)

(Note: Key words in parentheses are for reference in this paper and were not included in the questionnaire.)

The students were to rank the strength of their belief in each statement on an eight-point scale from *absolutely believe* (8) to *absolutely disbelieve* (1).

We wondered whether the exercise would teach the students skepticism for ESP statements only, or a more general attitude of skepticism, as we had hoped. For example, would their experience also make them more skeptical of astrology, Ouija boards, and ghosts?

We selected 15 more beliefs—supernatural, or at least "borderline-science"—and included statements about these in the questionnaire.

**Supernatural Items**

The star constellation under which a person is born can tell about his future and/or personality. (astrology)

Some UFOs (unidentified flying objects) are really flying saucers. (flying saucers)

Some mediums can get in contact with the spirits of dead people. (spiritualism)

Under hypnosis, people behave differently from the way they do in the normal state. (hypnotic state)

Human beings have souls. (souls)

There is a God. (God)

Some religious persons can cure people of illnesses to a degree not attributable to mere "power of suggestion." (faith healing)

The Ouija board has the power to give some people answers to questions they could not get otherwise. (Ouija boards)

Some people are able to tell colors by feeling them. (D.O.P.—dermo-optical perception)

Some people, by the use of a forked twig, can locate underground water. (dowsing)

It is possible to tell about a person's history or personality by the lines on his hands. (palmistry)

Horoscope books can tell about your future. (horoscopes)

Some people can tell about your personality by looking at your handwriting. (graphology)

Ghosts exist. (ghosts)

The menstrual cycle of females is related to the phases of the moon. (moon)

Finally, we wondered whether our trickery would have any effect on more neutral, natural beliefs, e.g., that man is descended from apes, or that smoking causes cancer. We wanted to include some "natural" items so that students wouldn't immediately interpret the questionnaire as a "survey of foolish beliefs." We included 11 statements about issues that are controversial but not supernatural:

**Natural Items**

Machines exist that measure electrical brain waves. (EEG)

Smoking causes lung cancer. (smoke—cancer)

Moths are attracted to light. (moths)

Scientists will find life on Mars. (Mars)

The only addicting effect of marijuana is psychological. (marijuana)

Some people are born unable to distinguish colors. (color-blindness)

Kennedy was shot by a lone assassin: Lee H. Oswald. (Kennedy)

Intelligence is at least partially determined by heredity. (intelligence)

Some animals can find their way in the dark by listening to echoes of their own voices. (animal sonar)

The pill is the most effective birth-control device. (the pill)

Man is descended from apes and lower animals. (evolution)

We called the questionnaire *A Survey of Controversial Issues*, and mixed the ESP, supernatural, and natural items throughout. We administered the survey to many different groups of students—sometimes once, usually twice or three times, with the testings counterbalanced to occur at various possible points in the sequence: sometimes before the ESP demonstration, sometimes after it, sometimes after the dehoaxing and/or the anti-ESP lecture. In this way, we could compare various groups or sets of groups to assess the separate effects of our manipulations. The data were analyzed by analyses of variance. The 6 ESP items were grouped for a single, average ESP belief for each subject; similarly, the 15 supernatural items yielded a supernatural-belief score, and the 11 natural items a natural-belief score for each subject.

The students took the questionnaire anonymously, but there was a space for listing sex and birthdate, and we used these data to match up the forms when questionnaires were given twice to the same class.

To determine the base rate of college students' beliefs independent of our meddling, we gave the survey to 200 Introductory Psychology students who did not take part in the other experiments (Fig. 1).

Students' belief in the natural items was highest of all, averaging 5.84 on the 8-point scale. There was significantly less belief in ESP (mean = 4.64), and still less belief in the supernatural items (mean = 3.89). This basic ordering of scores was obtained under almost every condition (usually significant with $p$ k 0.01), though in some testings, especially just after the ESP lecture, ESP belief was elevated as high as natural belief. There were no significant sex differences.

We did not assess changes within subjects from before to after the demonstration, since we felt this would encourage spurious changes.

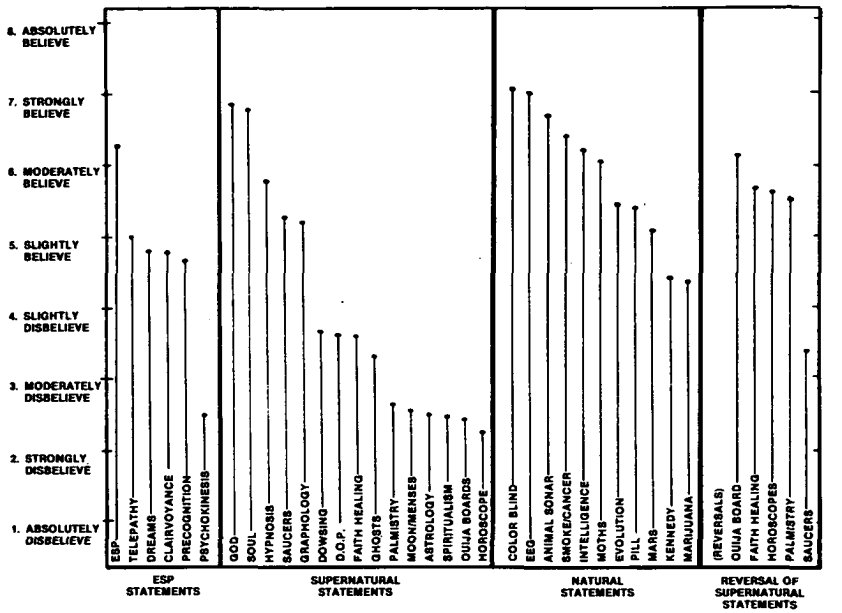


**FIGURE 1: Beliefs.** The mean beliefs of 200 college students on items on the Survey of Controversial Issues. Items are arranged within four categories in descending order of degree of belief.

Instead, we compared 55 students tested for the first time after seeing the ESP demonstration and found that they had a significantly higher belief in ESP than did a control group of 70 students who had not seen the demonstration ($p < 0.05$). The ESP demonstration had no significant effect on natural or supernatural beliefs. Further proof that the demonstration was effective came from a control group of 50 students who took the survey twice in two weeks, with no intervening manipulations. None of the belief-systems changed significantly during this period.

Generalization from one supernatural belief to others is not surprising; a person who believes in one paranormal phenomenon, such as ESP, tends to believe in others. In a group of 70 students participating in the survey for the first time, the correlation between ESP belief and supernatural belief was 0.58. Belief in ESP was also related to natural beliefs, though less strongly ($r = 0.25$). There was no relationship between supernatural and natural beliefs ($r = -0.05$).

*Generalization.* When we gave the survey to 39 students who had just seen Steve's impressive ESP demonstration, belief in ESP was elevated to an average of 5.72. After this testing I dehoaxed the students, presented the anti-ESP lecture, and then passed out the questionnaire again. Belief in

ESP had dropped to 2.6. Even though the lecture and dehoaxing dealt only with ESP, they were followed by a significant drop in supernatural belief as well, though this was not as dramatic as the drop in ESP belief. Natural beliefs did not change significantly.

These findings suggest a *generalization of skepticism*: teaching someone to be skeptical of one belief makes him somewhat more skeptical of similar beliefs, and perhaps slightly more skeptical of even dissimilar beliefs.

*Memory.* With one group we appended a few questions to the second version of the questionnaire (administered after the dehoaxing and the anti-ESP lecture), which asked students to recall how much they had believed in ESP on the *first* testing, taken just after the ESP demonstration. In other words, they were to recall the answers they had given to the ESP items just an hour before. On every question the students minimized the subjective change—they "pulled" their old ESP belief down toward their new level of disbelief, and assumed that their old level of belief in ESP was less than it actually was (Fig. 2). Later, we repeated this test twice on larger groups, and in both cases this *tempered recall effect* was significant ($p <$

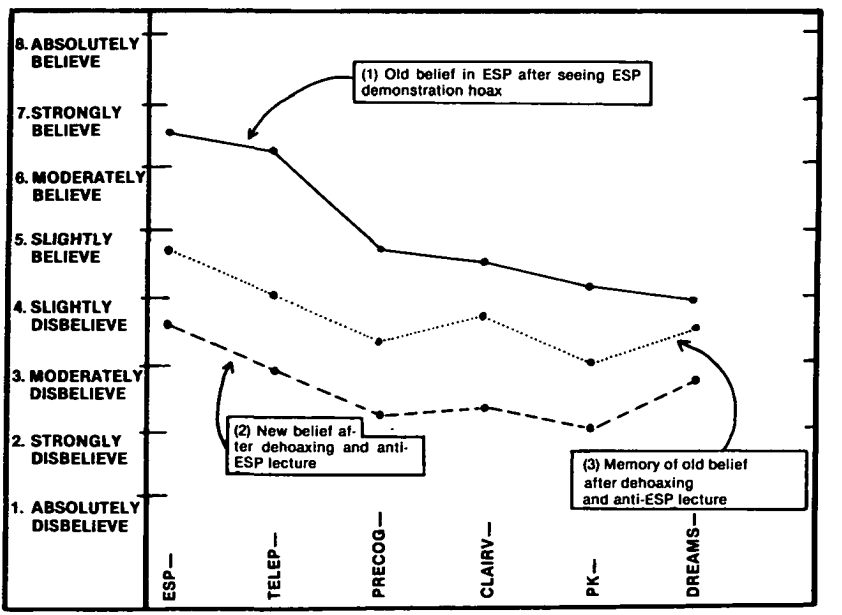


**FIGURE 2: Tempered recall effect.** Belief in six ESP statements (1) dropped considerably an hour later, after students were dehoaxed and heard a lecture critical of ESP. (2) On this second testing, students were asked to recall their earlier levels of belief. They consistently "pulled down" their old belief toward their new one, minimizing the subjective change. Data are presented in the order of descending degree of belief on the first testing.

0.01). In one study the old and new beliefs were 5.83 and 3.23, while memory of the old belief was 4.18; in another, the figures were, respectively, 5.39, 2.88, and 4.49. *The memory of one's old belief tends to split the difference between one's present belief and one's actual old belief.*

*Reversals.* The dehoaxing and anti-ESP lecture seemed to have a clear effect in making the students more skeptical of the propositions in the *Survey of Controversial Issues.* But were students becoming indiscriminately skeptical, disbelieving everything, no longer willing to take a positive stand, no matter what the issue? Would a student, for example, say that he didn't believe in flying saucers and also that he didn't believe in an opposite statement, that "flying saucers are all from earth"? To find out, we included toward the end of the questionnaire five statements that reversed earlier supernatural items:

**Reversal Items**

Belief in horoscopes is just a superstition. (anti-horoscopes)

It is impossible to tell about a person's history or personality by the patterns of lines on his hands. (anti-palmistry)

Belief in the Ouija board is a superstition. (anti-Ouija board)

Faith healing is just "power of suggestion." (anti-faith healing)

"Flying saucers" are all from earth. (anti-flying saucers)

We found that after the dehoaxing and the anti-ESP lecture, belief in these five reversal items rose instead of dropping. Apparently the students were not just checking the questionnaire blindly, disbelieving everything.

*Separating the Effects.* We had established that students became more skeptical of ESP and related beliefs after being dehoaxed and hearing the anti-ESP lecture; but which of these experiences was most important? Was it the hour-long attack on ESP by a psychology instructor or the simple realization that one had been fooled? We tried to separate these influences in our next experiment.

At an hour when two introductory labs, A and B, were in session, we arranged to have all students come into one room for Steve's ESP demonstration. Afterwards, all students answered the questionnaire.

The following week I went to Class A as a visiting lecturer and dehoaxed the students in the usual way—I told the students that they had been duped the previous week, explained how the telephone trick was done, and discussed the reasons for the hoax. I told them that Instructor B was at that moment explaining the hoax to his class, after which I would

talk about ESP to the combined classes. In fact, however, the instructor in Class B was going over quiz scores, stalling for a few moments while Class A was dehoaxed.

We then combined the classes, quickly and quietly, and I delivered the anti-ESP lecture. Everyone in the audience had seen the ESP demonstration, but only half of them had learned it was a hoax.

After the lecture, the students answered the questionnaire for the second time. I then explained about the previous week's hoax for the benefit of Class B, so that everyone left knowing the truth of the matter.

For Class B students, who did not know that the previous week's demonstration was a hoax, the anti-ESP lecture alone produced a significant drop in ESP beliefs of 1.66 points, with a slight generalization of

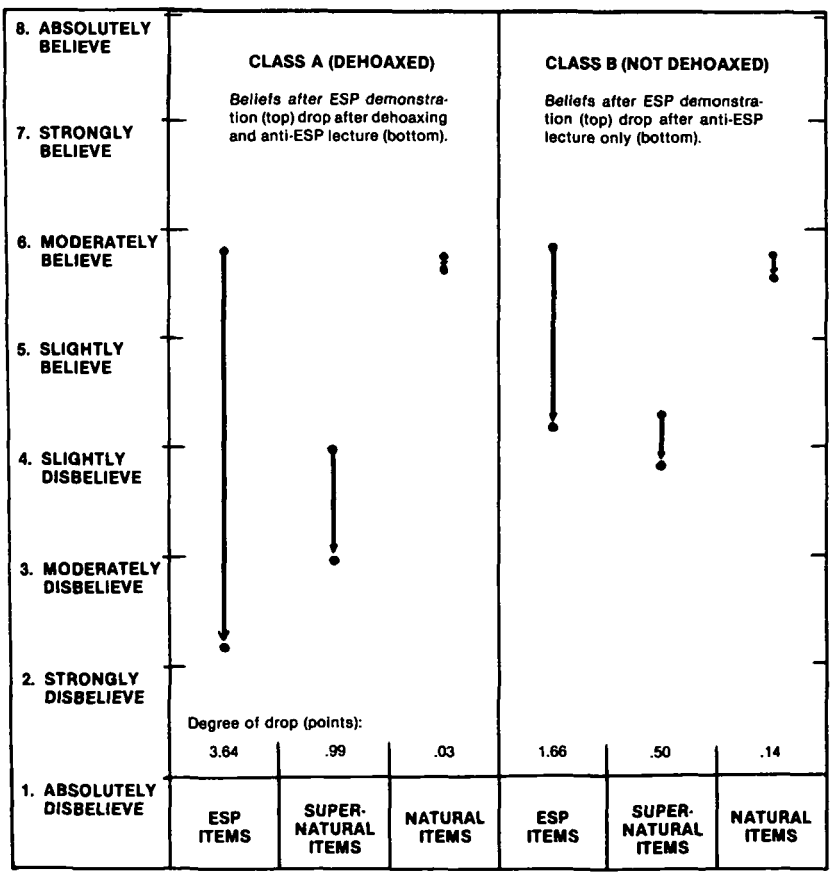


**FIGURE 3: Effect of dehoaxing.** Being told that one has been fooled is critical. In dehoaxed students, belief in ESP dropped 3.64 points. In students who were not dehoaxed, ESP belief dropped significantly less, only 1.66 points.

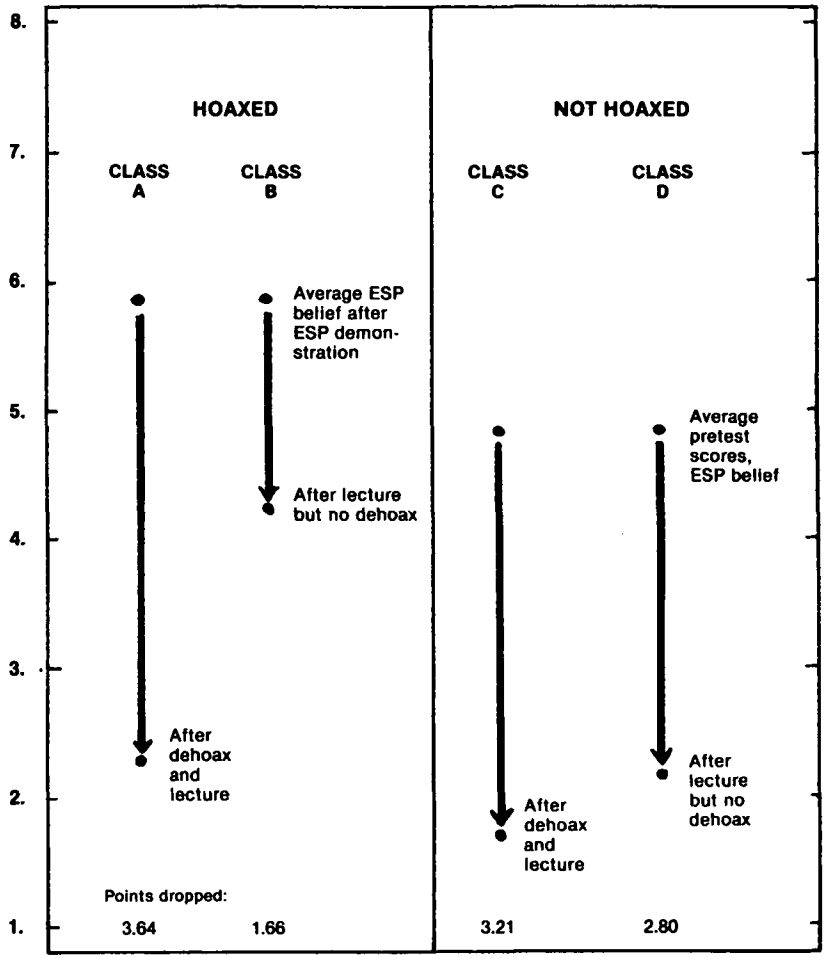


**FIGURE 4: Effect of hoaxing.** The greatest drop in ESP beliefs occurs after all three experiences—being hoaxed, then dehoaxed, and hearing an anti-ESP lecture. But final belief in ESP is slightly (but not significantly) lower in groups that have never experienced an ESP hoax.

skepticism to supernatural beliefs. Class A students, however, had a much more dramatic drop in ESP belief (3.64 points), as well as a greater generalization of skepticism (Fig. 3).

The dehoaxing experience was apparently crucial: a three-minute revelation that they had been fooled was more powerful than an hour-long denunciation of ESP in producing skepticism toward ESP.

*Effect of Hoaxing.* To measure the separate effects of the ESP demonstration alone, we repeated this experiment on two more classes, C and D, which also met simultaneously. But these classes never saw Steve's demon-

stration. The only time they took the survey was after the anti-ESP lecture. The difference was that Class D received the anti-ESP lecture alone, but Class C was "dehoaxed"—I told them how easily another class had been fooled—before the two classes were combined for the anti-ESP lecture.

In Class C students, there was a drop in ESP belief of 3.21 points, almost as great as in students who had been hoaxed.

In Class D students, the anti-ESP lecture alone produced a drop of 2.80 points in ESP belief (Fig. 4). This drop was significantly greater than the 1.66-point drop in Class B students who saw the ESP demonstration. This is understandable. Students in Class B saw the anti-ESP lecture as "equal time for the other side," but it was just an academic argument to them because they still thought they had seen real ESP the previous week.

The amount of "drop" in ESP belief was greater for the hoaxed students than for the nonhoaxed students. This was not terribly surprising, since in hoaxed students (Class A) the "drop" was measured from the inflated ESP belief taken just after the demonstration, whereas in nonhoaxed students (Class C) the "drop" was measured from the everyday pretest level. We did not find, as we had hoped, that the experience of knowing one has been duped produces more skepticism than one would have without the experience. The absolute levels of belief in ESP after it was all over were, in fact, slightly lower for the students who had not been duped, though the difference was not statistically significant. Our belief scale may not discriminate well at the low end. Also, there is the unanswered question of how long the effects last. We were unable to do follow-up studies. It may be that hoaxed students remember the lesson longer, but we don't know.

Anecdotal evidence suggests this may be the case, that nothing can quite undo the psychological effect of believing that one has seen ESP before his very eyes. E. J. Dingwall, a member of the Society for Psychical Research, in Britain, thinks everyone should go the route of first believing in something paranormal and then being disabused of it. He says that, as a young man, for three days he actually believed that one spirit medium had powers to communicate with the departed, and then he bothered to look under the table and found out how she was doing it. The revelation, he said, was so strong it lasted him for the rest of his life.

Our exercise that started as a lesson in scientific method aroused so many theoretical questions about the nature of belief that we indulged our curiosities for almost two years on several hundred Introductory Psychology students. Did they learn anything more than the fact that their instructor was a very curious fellow? Did they, the next time they saw a newspaper account of the paranormal, examine it with caution, reason, and determination not to be fooled again? I hope so. I sincerely hope so. •