

## A Controlled Test of Dowsing Abilities

James Randi

When a series of five one-hour television documentaries, *Indagine sulla Parapsicologia* (Inquiry into Parapsychology), was released in Italy in 1978, there was a storm of protest. Singled out for large amounts of crank mail and press censure was Piero Angela, Italy's best-known TV journalist, who had hosted, and indeed conceived, the program series. Angela had begun his investigation with an open mind, but he was soon soured by the discovery that most of the parapsychologists he interviewed throughout Europe, the United States, and South America either had no good evidence to show him or would not answer direct questions about their work. The TV series concluded that there was no basis for a belief in the paranormal.

Italy is quite dedicated to belief in such matters. Numerous organizations rose to criticize Angela and RAI-TV, the producers of the documentary, and the fire was further fanned by publication of Angela's book *Viaggio nel Mondo del Paranormale* (Journey in the World of the Paranormal). My personal offer of \$10,000 to anyone performing a paranormal feat under proper observing and control conditions was outlined both in the TV program and in the book. Immediately, applicants began to register their desire to claim the reward.

I delegated Piero Angela to handle the preliminaries for me by asking that all applicants sign an agreement saying (a) that they could perform in the presence of a skeptic, and (b) that they would pay their own travel costs to visit Rome to be tested. By this means, most of them were eliminated. But some 40 remained who were willing to be tested; and RAI-TV arranged, in return for the filming rights of the event, to pay my travel and living expenses during the tests, which were held from March 22 to March 31, 1979. I visited there in the company of a colleague, William Rodriguez, who assisted with the supervision of the controls.

The list had dwindled to 11 by the time we arrived. Of these, only 9 eventually showed up, and of that small number, four were dowsers, claiming the ability to find water using various devices. This article will deal exclusively with those individuals, leaving the table-tippers, ESP

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*James Randi is a professional magician, a member of the executive Committee of CSICP, and a well-known investigator of "psychics."*

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artists, and others to a future writing.

The TV people had arranged for a location some 30 miles outside of Rome, near the town of Formello. I had prepared a guarded plan (see Figure 1) of a set of three pipe-patterns that were to be laid out and then covered with 50 centimeters (20 inches) of earth, within a plot measuring 10 meters square (33' x 33'). A set of carefully explicit rules was written up that had to be agreed to by the dowsers in advance of their participation. There were three days of haggling over conditions, each performer having his own variations, but eventually everything was resolved.

It was required that each dowser agree that (1) he felt able to perform that day under the stipulated conditions; (2) he was able to find water flowing at a minimum rate of 5 liters a second in a pipe 8 cm in diameter buried under 50 cm of earth; (3) the presence of skeptical persons and TV cameras with other electrical equipment was not a negative factor; (4) he would scan the area for any natural streams running underground before beginning the test, thus eliminating any possible interference with the test itself; (5) he would demonstrate the detection of running water in the exposed section of the pipe, while water flowed in it, as a preliminary; (6) detection of running water in the correct path was to be the goal of the tests, and rationalizations or excuses would not be acceptable; (7) the performer would place between 10 and 100 pegs along the path he found, each peg to be placed within an area 20 cm (8 inches) wide, centered on the actual pipe; the contestant must have at least two-thirds of the pegs on any path placed within these limits, and must succeed in doing this in two out of three tests.

I agreed to give the check for \$10,000—which was placed in the hands of the presiding lawyer—to any contestant who met these conditions.

After numerous delays (hailstorms and such) the tests finally got under way. The first testee, Giorgio Fontana, had shown us the night before his uncanny ability to dowse atlas maps, and we were treated to a confidential demonstration that revealed a vast river of crude oil that flowed underground from Greenland, past England, across France and Italy to Tunisia. There, Fontana told us, we were being robbed by the Tunisians who tapped off all that oil.

Fontana's dowsing tool was a pendulum. Popular as a "psychic tool," in France in particular, such a device is simply a string or chain with a weight on it. Fontana rushed about wagging his pendulum over the ground, pointing where he wanted pegs placed by the surveyor. (See Figure 2.) As determined by random selection, path C had been used first. Fontana pegged out a path that ran almost straight from the inlet valves to the reservoir, which closely approximated actual pipe B! I had used this one optimally simple and direct route on a whim, to show that the shortest distance between the two points could not be found. I had not counted on

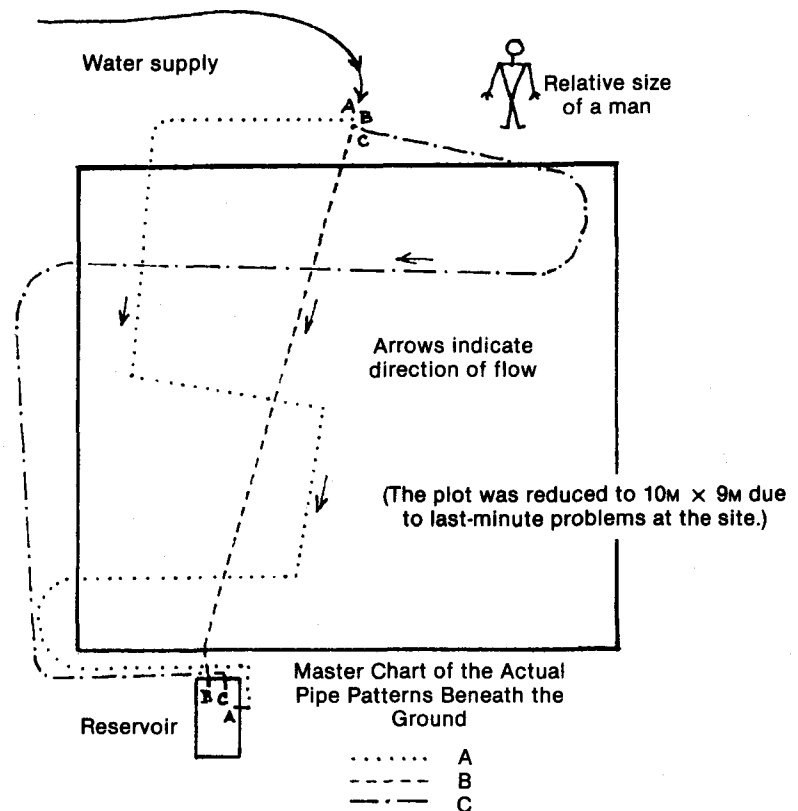


FIGURE 1. Plan of the test plot.

such a possibility as being outguessed, and though I believe Fontana's almost-success here was the result of naiveté rather than planning, it was a strong lesson for me. Regardless, the guess was totally wrong. Only one peg out of 30 was within the limits.

Next, he traced another zigzag path that was supposed to be—again—path C. This time, 2 out of 32 fell within limits, at right angles to the true flow. Finally, when path B was chosen at random, Fontana showed signs of giving up; but when reminded that he had to do three trials, he merely indicated we could use his first try as a repeat. And that was nearly correct, though he did not actually dowse it out! Even then, only 6 of 30 pegs would have been correct, and Fontana was a loser.

Then Professor Lino Borga stepped up. He was enthusiastic, effervescent, and loquacious in the extreme. He declared that the prize was in the bag, and he was about to show us a thing or two. He apologized in advance for having to take my money. He was using a device I'd not seen before—two rigid sticks hinged together near one end, forming a "V" that spun about between his hands. His first path was in response to pipe B, and was

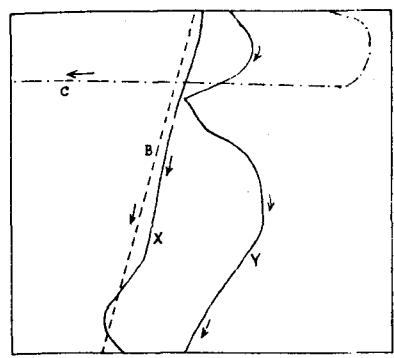


FIGURE 2. Fontana traced the vertical line (X) as path "C" (horizontal path at top), then the other (Y) as another attempt at "C." Finally, he did not trace his third try, but said we could use his first (X) as his third guess. It was actually "B"—the direct line between the valve and the reservoir!

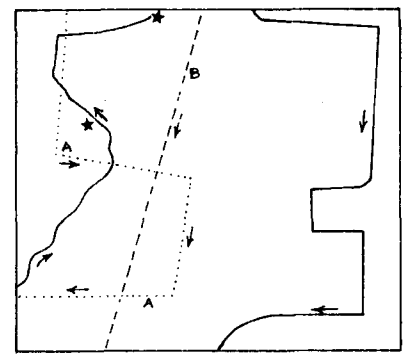


FIGURE 3. Borga's three attempts were far off the mark. He traced the pattern at the right as path "B" (dashed line), then traced it again as path "A" (dotted line), and then made the line at upper left to represent "A" again. The section between the stars indicates where water had ceased flowing, yet the dowser continued, not knowing this.

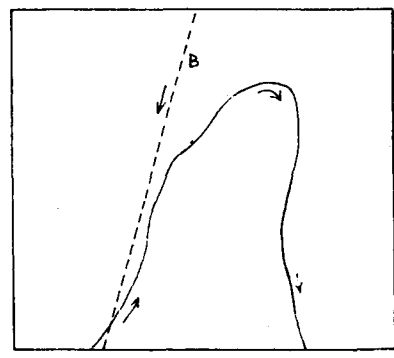


FIGURE 4. Path traced by Senatore. He was only able to make one attempt, due to lack of time. He crossed the actual water path only once, going the wrong way.

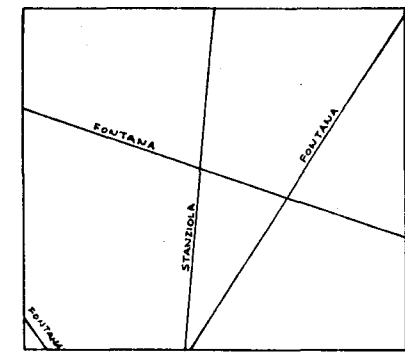


FIGURE 5. Only two dowsers decided there was any "natural" water on the site. Thus they disagreed with the other two, who said there was no water there. As seen in this chart, there was no agreement between any of them.

never even near it. When A was chosen, he decided it was again the same path he'd just traced; but he traced it again to be sure, repositioning several pegs by as much as a centimeter for greater accuracy. But again, this path *did not even intersect* the correct path. Finally, Borga gave us a wiggly response to A once again, which was not only incorrect but went in the wrong direction. Only 2 out of the 27 points he chose were within limits. All in all, he'd needed 58 pegs properly placed. He got 2, entirely by accident.

But the most interesting point about Borga's demonstration was this:

For the last few minutes of his last trace, we noted that the water had run out of the supply truck! Consult the map (Figure 3). Between the two spots marked by stars *there was no water flowing in the pipe at all*. Yet Borga continued his frenzied plotting with no water flow, and certainly not in the right place or direction. As we called his attention to the cessation of the water, saying that it was "running down," though it had actually *stopped* some time before, Borga exclaimed that it was evident from his motions. Sure enough, as he reached the end of the trace he was making, his rods slowed down, as if in response to the water stopping. This leads one to the suspicion that dowsing is the result of imagination and involuntary actions, and not a response to water or any other substance.

Then we turned to Mr. Stanziola, a pupil of Professor Borga. He probably suspected chicanery, for when he was asked to show that his dowsing-rod (a straight stick held in a bowed position) reacted to the water in the exposed part of the pipe as it flowed, he said he got no reaction. We terminated the test there, since even the fundamental dip of the rod was absent. I think Stanziola believed we had no water flowing at that point, but it was flowing copiously, as witnessed by the engineers present, at more than twice the 5-liters-a-second rate they had demanded. Exit Stanziola.

Vittorio Senatore was next, an intense young man using a piece of canelike stick, broken in the center so as to be flexible. He looped this into a script L shape and walked about entranced, eyes closed, though peeking a bit. Several times the stick flipped out of his hands, though under what mysterious power we could not tell, since he missed the chosen path (B) grandly—wrong path, wrong direction (Figure 4). Since time was running out, as well as water, he had the opportunity for only one trace, but agreed that his reputation would rest on that one attempt. In fact, Fontana, Borga, and Senatore all declared that they had been 100 percent successful, and were confident they had won the prize.

Since they had not been allowed to consult with one another after their trials, they had no idea that not only had they all failed, but two of them had declared there was no natural water flowing at the site, and the other two had plotted "rivers" and disagreed with each other. See Figure 5.

I will not detail the confrontation that took place after the tests when we retired to a local restaurant amid many bottles of spirits to discuss the results. Suffice it to say that our conclusion was that dowsing was very surely not demonstrated; yet the dowsers themselves, after due consideration of the day's events, thoroughly convinced themselves that some strange influence was afoot, since none of them had ever failed before!

I await other claimants to the prize offered. •

## Science and Evolution in the Public Eye

Laurie R. Godfrey

Many educators have expressed surprise at the extent to which students believe sensationalistic and catastrophic explanations of the origins of cultural and biological traits. Their inclination is to ignore sensationalism as "unworthy" of serious discussion, but they are being hampered by political pressures from the sensationalists, who tend to view themselves as bearers of "true science" and as opponents of outdated scientific beliefs or orthodoxies. Thus these catastrophic and often cryptoscientific views of racial and cultural trait origins are being given increasing exposure in popular literature, on TV, in movies, and in public school and college classrooms.

Among the most notorious examples of this alarming trend are von Däniken's *Chariots of the Gods?* (1970), Barry Fell's *America B.C.* (1976), Jeffrey Goodman's *Psychic Archaeology* (1977), the "In Search of" TV series, and the current UFO mania. Organizations with blatantly racist motives, such as the Nazis and the Ku Klux Klan, who proclaim separate "origins" (or creations) for different "races," are once again growing in visibility. The "orthodoxies" of the anthropological "establishment" are being challenged by students who proclaim separate-origins explanations (a series of invasions from outer space, or "experiments" by a creator) and by some of those proclaiming a single creation.

These sensationalist views are financially supported by evangelistic grass-roots organizations. These organizations are politically active in the sense that each is "spreading the word." The various Bible research groups that hold weekly or biweekly meetings on college campuses engage in peculiar mixtures of odd-fact collecting and religious ceremony. Similarly,

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Laurie Godfrey is assistant professor of anthropology at the University of Massachusetts, Amherst, and author of the forthcoming *Evolutionary Change: A Problem-Solving Approach*. (Compress, Wentworth, N.H.).

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