

# SWIFT



VOL. 1 NO. 1 1997

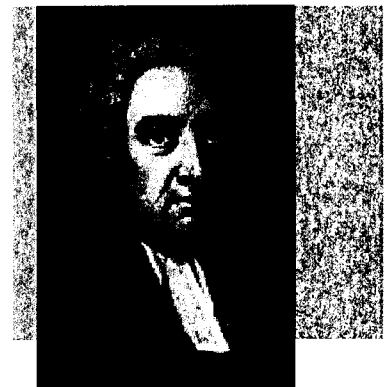
## WHENCE SWIFT AND WHEREFORE ITS USAGE?

by James Randi

Jonathan Swift (1667-1745) was an Irish-born writer and satirist whose most enduring work, *Travels into Several Remote Nations of the World*, better known as *Gulliver's Travels*, delineates the adventures of Lemuel Gulliver. Gulliver encounters strange and wondrous peoples and places, lands of giants and tiny people, a dominant species of horse whose beasts of burden are a degenerate species of humans, and a floating island inhabited by spaced-out scientists and philosophers who hardly deal with reality.

Swift didn't please all his readers. He infuriated many, was threatened with lawsuits, and made enemies among many influential persons of his day, a situation with which I am not totally unfamiliar. But he was among the first to launch well-deserved and well-designed satirical attacks against the flummery — political, philosophical, and scientific — of his time, a tradition that was adopted and perpetuated by several of the publications that succeeded him. A century after his death, and perhaps in observation of that event, the British humor magazine *Punch* defined a variety of swindler thus: "The Quack is a personage too essential to the comfort of society to be deprived of his vocation. He is, in fact, the Physician of the Fools, a body whose numbers and respectability are by far too great to admit of anything of the kind." Alas, this definition stands today, all too accurate. The James Randi Educational Foundation (JREF) heartily endorses satire and wit as weapons to defeat the forces of crackpottery and quackery.

When British publisher Sir Richard Steele started the racy penny newspaper *Tatler* in 1709, he used one of Swift's noms de plume, Bickerstaff, to borrow on the great success of the satirist. We will dare to use his actual name here, in our new publication, paying homage and hoping that the association with such an illustrious historical character might lend a gloss to our efforts.



JONATHAN SWIFT,  
FROM A PORTRAIT BY  
FRANCIS BINDON

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# THE OFFICIAL 1996 PIGASUS AWARDS FROM THE JAMES RANDI EDUCATIONAL FOUNDATION

ON APRIL 1ST, WE AWARDED THE COVETED PIGASUS PRIZES IN FOUR CATEGORIES, FOR ACCOMPLISHMENTS IN THE PERIOD JANUARY 1, 1996 TO DECEMBER 31, 1996. THE AWARDS WERE ANNOUNCED VIA TELEPATHY, THE WINNERS WERE ALLOWED TO PREDICT THEIR WINNING, AND THE FLYING PIG TROPHIES WERE SENT VIA PSYCHOKINESIS. WE SENT; IF THEY DIDN'T RECEIVE, IT'S PROBABLY DUE TO THEIR LACK OF ABILITY. THIS YEAR, WE AWARDED THE PRIZES TO:



THE SCIENTIST WHO SAID OR DID THE SILLIEST THING RELATED TO THE SUPERNATURAL, PARANORMAL OR OCCULT...

Scientist/physicist Ed May. May headed up the CIA "remote viewing" project which consumed \$20 million of our tax money on "remote viewing," a technique said to bypass time and space to obtain secret information via "gifted psychics" on the CIA payroll. The 10-year project provided no useful or accurate data, and former CIA director Robert Gates implied that pressure from members of Congress drove the CIA's involvement. This failed project was enthusiastically supported by Sen. Claiborne Pell (D-RI) and Rep. Charlie Rose (D-NC).



THE FUNDING ORGANIZATION THAT SUPPORTED THE MOST USELESS STUDY OF A SUPERNATURAL, PARANORMAL OR OCCULT PHENOMENON...

Robert Bigelow of the Bigelow Tea family. Mr. Bigelow not only gave large sums of money to Harvard University's Professor John Mack and to million-seller author Bud Hopkins on the strength of their "alien abduction" beliefs, but also

purchased (for a purported \$230,000) a "haunted ranch" in Utah where UFO attacks and "inter-dimensional portals" had shown up in the wake of mysterious "cattle mutilations." Mr. Bigelow, perhaps understandably, lives in a walled-in home in Las Vegas.



THE MEDIA OUTLET THAT REPORTED AS FACT THE MOST OUTRAGEOUS SUPERNATURAL, PARANORMAL OR OCCULT CLAIM...

Divided among the multitude of newspapers, magazines, TV programs, and radio shows who have continued — despite the wealth of contrary evidence — to perpetuate the myth known as The Roswell Incident, which claims that an alien spacecraft crashed near Roswell, New Mexico in July 1947, and that bodies of the aliens were spirited away by U.S. government agencies. The very lucrative UFO/tourist trade (90,000 tourists a year) that resulted has supported Roswellians handsomely ever since. The media have ignored the fact that the "UFO museums" are only collections of newspaper clippings, and that the owner of the property where the aliens are said to have crashed charges \$15 a head to see the spot, while the town officials have moved

the "authentic" site onto land owned by the U.S. Forest Service, due to the uncooperative land owner. And, not one scrap of wreckage has ever been produced! The U.S. Air Force explanation, that once-top-secret Project Mogul was the source of the crashed UFO debris — balsa wood, mylar foil and tape — continues to be ignored.



THE "PSYCHIC" PERFORMER WHO FOOLED THE GREATEST NUMBER OF PEOPLE WITH THE LEAST EFFORT...

"Psychic" Sheldon Nidle of Walnut Creek, California. Nidle predicted that the end of the world would come on December 17th, 1996, when "millions of spaceships" accompanied by angels would arrive along with "the Photon Belt." He assured us that we would have "16 years of light 24 hours a day" after the Photon Belt "hits [our] pineal glands." This would "activate all 12 strands of [our] DNA." When December 17th apparently came and went without the promised events being evident, Sheldon explained that we naturally were unaware of the fulfillment of his prophecy, since we are now living in a special holographic projection created by the angels, and we've been given another chance to make good. What a relief!

—J.R.

## A DEFINITIVE TEST OF THE DOWSING CLAIM PART ONE

*The following feature article originally appeared in the January 1991 issue of Skeptiker, the German skeptics' journal. It will appear here in two parts. This series of tests was probably the most carefully-designed and implemented experiment ever done on this very old and revered notion that underground water and hidden materials can be sensed by individuals using sticks, rods or other such devices. We attracted 19 dowsers from all over Europe, of all ages and both genders, eager to win the 20,000 Deutsche Mark (DM) prize. The Hessische Rundfunk TV network paid the expenses of setting up this extensive set of tests, with the intention of videotaping it in detail and producing a one-hour TV special on the project. They gave us the use of a property adjacent to their headquarters outside Kassel, Germany. What follows is a report that appeared in Skeptiker. We are much indebted to Ms. Jutta Degener, who favored us with this exclusive translation.*

After more than a year of preparations that involved many different disciplines, the first original project of the German skeptics' organization, GWUP (Gesellschaft zur wissenschaftlichen Untersuchung von Parawissenschaften, Society for the Scientific Examination of Parasciences), was conducted in November of 1990, at the city of Kassel, 100 miles north of Frankfurt. For these dowsing tests, a carefully-designed methodology was of prime importance, and despite limited financial resources, reliable procedures for control and security were developed. Obviously, results of such tests would have to be acceptable even by critics who had just recently accused the skeptics, who they felt were "brimming with incompetence" and full of "frivolousness." It is now hoped that after the exemplary Kassel tests, such outbursts will have become a thing of the past.

# THE KASSEL DOWSING TEST

*By Robert König, Jürgen Moll, and Armadeo Sarma*

## CONCEPT AND PLANNING

The idea of a dowsing test is nothing new, as we can see from the abundance of reports and results from the past. Two reasons nevertheless compelled the GWUP to plan and conduct such a test.

First, the research conducted so far appears to be known to only a small circle of scientists and interested amateurs, and moreover, has produced somewhat contradictory results. This fact has brought about a polarization of opinions about the dowsing phenomenon with the pub-

lic and in scientific disciplines, and has thus fostered a climate where roughly 10,000 active dowsers in Germany alone can generate a conservatively-estimated annual revenue of more than 100 million DM (US\$50 million).

Second, we are of the opinion that tests of extraordinary claims require particularly careful design and control of experiments. In spite of considerable expenditures of time and money, the 1988 scientific investigations in German-speaking countries have, sometimes blatantly, lacked that care. This raises ques-

tions about their scientific validity. It therefore appeared necessary for us to design a test which would do justice to the phenomenon we were investigating and which would be a good example of proper scientific treatment of the parasciences.

## DESIGN AND PREPARATION

With these self-imposed goals, the GWUP entered the design and preliminary phase of the dowsing test in the summer of 1989. In this phase, a most important impetus came from the well-known Ameri-



A BAVARIAN DOWSER INTENTLY APPROACHES THE MARKED POSITION OF THE BURIED PIPE, FORKED STICK AT THE READY.

*photo by James Randi*

can illusionist and active skeptic, James Randi. He made the US\$10,000 prize he had been offering for more than 25 years available to any successful dowser in our tests. Members of the GWUP contributed considerable knowledge and experience from various scientific areas to the planning activities. Finally, we found another partner in the "Hessische Rundfunk" (the Hessian state-owned broadcasting station). They provided us with a suitable environment and infrastructure, played an important role as a neutral observer by recording the tests on videotape, and afforded us effective access to the public. In late summer of 1989, we publicly announced our test with a press release and thereby made the first contacts with potential participants; in reaction to the numerous media reports, about 100 dowsers contacted the GWUP. In the following months, we tried to gain a clear impression of what kind of abilities were being claimed by means of a series of letters and a questionnaire. It turned out that a majority of prospective dowsers claimed the ability to locate running water in pipes. We therefore decided in the spring of 1990 to base the dowsing experiments primarily on this form of test. In addition, some dowsers indicated their ability to sense different kinds of substances (base metals, precious metals, coal, oil, magnets, etc.). This prompted the development of a second class of tests which we could offer the participants as an alternative or an addition. For effective coordination of the preliminary activities, the GWUP board of directors had al-

ready established a four-person committee in February which took over the task of technical design. For this, a list of requirements was derived from the aforementioned conditions to ensure that a proper scientific examination of the phenomenon would result. Thus, the test had to meet the following requirements:

- (1) The test conditions had to be suitable for proper testing of the claimed abilities.
- (2) The hypotheses that were to be tested had to be defined precisely, so that the results would either confirm or deny it.
- (3) It had to be ensured that no ability other than the one claimed could lead to a positive test result. Such unwanted effects can be induced both consciously and unconsciously. Therefore, a double-blind test was imperative.
- (4) The likelihood of success in the test by chance alone should be sufficiently small. Since these were extraordinary claims that contradicted fundamental scientific experience, a high level of statistical significance should be required for a success to be achieved.
- (5) The participants would have to explicitly approve of and agree with the conditions of the tests.

Admittedly, controls (item 3) can only ever be relative. Given sufficient technical aids, it is in principle always possible for a deliberate deception to succeed. That is why James Randi's advice was very important for the project. He helped set sufficient controls. Based on these requirements, the committee worked out alternative approaches for the project's technical realization. Simultaneously, the potential participants were notified of the progress

of the preparations and of the protocol requirements. After extensive preparatory talks with the Hessische Rundfunk, including multiple visits to the location in Kassel, and after a continued and very productive consultation with James Randi, we settled on a simple but effective design for the experiments.

## TECHNICAL DESIGN

Probably the simplest imaginable task for a dowser who is supposed to locate running water in pipes is a direct yes-or-no decision. Following this premise, we defined the tasks as follows: Decide whether there is water running through a subterranean pipe with known location. Each participant should make this decision on thirty separate runs. In exchange for a total prize money of 20,000 DM, we expected 25 correct answers, a success rate of 83%. If successful, this result had to be reproduced in a second test, again with a success rate of at least 83%. For the second kind of test, the task was specified just as accurately: In which of ten plastic containers is an item previously selected by the participant? In these tests, we limited the number of single runs to ten and the necessary hit rate to 80%, equivalent to eight hits. Here, too, we demanded the reproduction of a successful result in a second set of tests.

From the above, we derived the following hypotheses to be tested:

(a) Dowsers can in at least 83% of all cases tell whether water is running inside a plastic pipe or not, whereas the expected chance success rate for this is 50%.

(b) Dowsers can in at least 80% of all cases tell in which of 10 boxes a previously agreed-on item is located, whereas the expected chance success rate for this is 10%.

The results demanded were below the abilities claimed by the dowsers. They themselves claimed a success rate of at least 90% or, usually, 100%. Based on the hypotheses, two outcomes were possible:

1. The dowsers would produce the required results. This would indicate the possible reality of the dowsing effect.

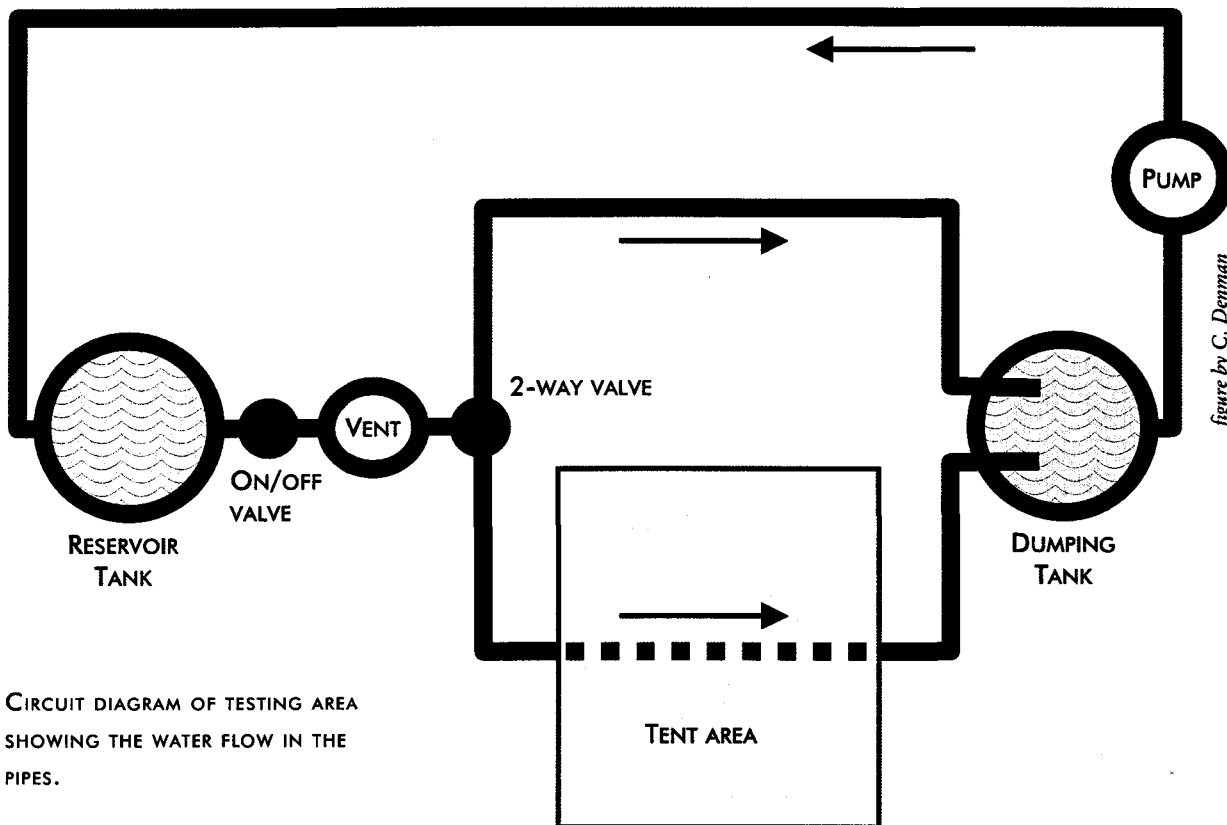
2. The dowsers would not produce the required results. If the results of the group of dowsers were distributed as would be expected according to chance, that would confirm the chance hypothesis. But if the distribution were to differ significantly from the chance expectation, this could serve as a starting point for new experiments using new hypotheses. Of course, this would only apply to the tested dowsers and the agreed-on conditions.

These clear conditions and tasks defined the technical design of the experiments to a great extent. The final layout of the experiments was, apart from the simple technical constraints, also influenced by the conditions listed under the second possibility above, and in addition had to take the natural features of the test site into account. All these considerations resulted in the experiments described here. They were carried out in the beginning of November 1990 at the Hessische Rundfunk facility in Kassel. The setup for the "water test" consisted of a rectangular pipe system a total of 40 meters

(130 feet) in length, which was buried 50 centimeters (20 inches) deep under meadow soil. The plastic tubes used had an inner diameter of 5.7 centimeters (2.25 inches). Since the area was naturally inclined, gravity assured a sufficiently copious flow. The system was fed from a 400-gallon container placed above the pipes. On the downhill side of the rectangle, the water drained into a similar container, from which it was pumped back up to its original container through another pipe by a motor pump. The closed cycle thus formed was controlled by three valves placed on the line connecting the storage container and the rectangle of pipes:

1. Main valve (On/off valve)
2. Vent, guaranteeing the complete evacuation of a previously flooded line
3. Two-way valve, used to control the direction of the flow through two possible lines: (a) into the test line (main line); (b) into the bypass (side line).

Identical conditions regarding noise and vibrations were assured by having water flowing in every case. That completes the description of the technical components of this setup, emphasizing its desired conceptual simplicity. A distinct advantage of this factor is that it makes it easy to check both the technical parameters and the settings and dowsers' statements to be recorded. This cannot be underestimated and is a mark of quality in such tests. That simplicity is also found in the design of the "box experiments." In an adjoining barn, ten opaque plastic boxes of identical construction were



CIRCUIT DIAGRAM OF TESTING AREA SHOWING THE WATER FLOW IN THE PIPES.

placed on a bench and clearly numbered from 1 to 10. Each participant could choose an item from the following list: iron, coal, gold, silver, magnet, copper.

The selected material then had to be located in one of the ten containers by the dowser. More so than with most other scientific experiments, the investigation of parascientific claims demands special controls and security. A qualitative statement about the claimed abilities based on test results is permissible only if two requirements have been unconditionally met:

- Double-blind tests
- Complete documentation

The following description of the course of events, the recordings and

the complete suppression of unwanted paths of information shows how much value was placed on meeting these requirements.

### PROCEDURE

The "water test" course itself, and the participants and the test supervisor, were located inside a closed 8 X 6-meter (26 X 20-foot) tent. This testing space was crossed by the subterranean line across a span of 20 feet as shown in the figure above. We laid out the tent's interior with artificial turf and marked the path of the line with brightly-colored plastic tape, accurate to the nearest half-inch. Around the valve area we built a closed shack in which two experimenters were busy setting up and documenting the individual runs.

Additionally, a video camera recorded all the setup (randomization, valve-operation, step-cuing) procedures. The receptacle tank (drain tank) on the other side of the tent was covered with strong wooden boards and was under surveillance at all times. In addition, the whole area was cordoned off, giving access to no one except participants, observers and representatives of the media. Before the actual tests began, we checked extensively whether the system was watertight and functional. We also measured the time it took to fill and to empty the pipes. This allowed us to minimize the communication between the observers during the tests. Before every trial run, the system was in a neutral state; that is, the main valve was closed, the air



▲ THE "SWITCHING SHED" (LEFT) AND ACCESS TO THE MAIN TENT. AMARDEO SARMA OF THE GWUP (IN CAP) CHATS WITH A DOWSER WHILE THE HESSISCHE RUNDfunk TEAM VIDEOTAPES THE EVENT FOR THEIR PLANNED TV SPECIAL ON THE TESTS.



USING THE "PARALLEL RODS" TECHNIQUE, A DOWSER LOOKS FOR A SIGNAL AS HE PASSES THE TEN BOXES, ONE OF WHICH CONTAINS THE TARGET: A BAG OF GOLD COINS. ►

*photos by James Randi*

valve open, and the two-way valve was in the middle position. The test supervisor in the tent area with the dowser started every single trial by loudly announcing the number of that run. Simultaneously, he started a stopwatch. Prompted by that, an experimenter in the wooden shack decided the random position by drawing a marked ping-pong ball from a bag. The valves were set (water/no water thru the tent) according to the marking on the chosen ball. The task of the second person in the shack was to record the settings and control the schedule with a second stopwatch. After 30 seconds had passed and the water flow was begun, either through the test area or around it, the head experimenter signaled the participant, who

then attempted to determine the current condition of the flow. Also, simultaneously, the observer at the receptacle tank checked and recorded the state of the system. After the dowser had arrived at a yes-or-no decision, the supervisor gave an acoustic signal, restarted his stopwatch, and recorded the decision in writing unless the participant had done that already. Within another 30 seconds, the pipe was drained and the system was brought back into the neutral state described above. The "box experiments" were comparatively simple and easier to conduct. First, an experimenter decided in a procedure similar to the "water test" which box a selected item should be placed in. The number of the box was recorded and the item placed in

it. The experimenter then left the testing grounds and signaled acoustically to another observer that the test was set up. The observer then entered the testing ground together with the participant and recorded the participant's statements about the location of the item. The chance selection and the set up and the decision of the participant were recorded with a stationary video camera. So here, too, three independent records were available. This strictly formalized schedule ensured complete double-blindness on one side and multiple, independent protocols on the other. Voluntary or involuntary manipulations during the tests both from the experimenters and from the participants were thus, to the best of our knowledge and ability, excluded.

## **DECLARATIONS BY THE DOWSERS BEFORE AND AFTER THE TESTS**

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### **DECLARATION**

I DECLARE THAT I HAVE BEEN GIVEN SUFFICIENT INFORMATION ABOUT THE TESTS BY THE GWUP AND BY JAMES RANDI BOTH VERBALLY AND IN WRITING. IN PRE-TRIAL RUNS, I HAD THE OPPORTUNITY TO ADJUST MYSELF TO THE CONDITIONS, AND I FEEL PHYSICALLY AND PSYCHICALLY ABLE TO SUCCEED IN THE TEST UNDER THE GIVEN CIRCUMSTANCES.

### **DECLARATION**

I DECLARE THAT THE TESTS WERE CONDUCTED IMPECCABLY. THE TEST CONDITIONS AND THE SCHEDULE HAVE IN NO WAY IMPEDED ME DURING THE TESTS.

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During the whole project, particular attention was paid to informing and involving the participants. The test could be meaningful and significant only if the participants shared our opinion that the test could lead to a definitive statement about their claimed abilities. To ensure equal treatment of all participants, we distributed all information in writing and formalized the further treatment before and after the actual tests according to the following pattern: After the official greeting by the GWUP and James Randi, each participant was supplied with extensive written information on the design of the test. Contained in it was a questionnaire we had developed. In it, all participants confirmed that at least one of the aforementioned test formats was suitable for testing their abilities. All participants also declared that they had been given sufficient information about the tests both in writing and verbally. Then we led the dowsers individually to the testing grounds in a previously determined random order. On location, we showed and explained the technical details and the schedule. Every participant was then asked to probe the testing grounds with the dowsing instrument for any possible natural sources of interference (buried metal, water, oil, etc.). Any anomalies that they thought they'd found were recorded and the locations were transferred onto an accurate scale map, so that we could offer an area during the actual tests that was certain to be free of extraneous interference. Additionally, each participant confirmed that any interference that they'd found would not

diminish his or her abilities. These assessments were performed by each participant individually before being taken to the holding area, so that no one might communicate findings to the others. Immediately before we did each set of the actual individual trial runs, we held designated "open trials" with each of the dowsers, in which the participant knew the current setting (water/no water) of the experiment. Thus, they could familiarize themselves with the two possible states as experienced at that site. (All the participants scored 100% when tested this way.) Finally, after the open trial run, each participant signed the statement shown on the left.

The preceding list shows the singularly careful design of these tests, a necessary precondition and an indication of the validity and the scientific value of the results. Here, too, the Kassel dowsing test can be considered exemplary, and once again we have demonstrated the special requirements of experimental testing of parascientific claims. ■

**IN OUR NEXT ISSUE: THE TESTS COMMENCE, ARE COMPLETED, AND THE EAGER DOWSERS GATHER TO HEAR THE RESULTS ANNOUNCED.**