MEASURING THE PHENOMENON OF DOWSING

By Alvin B. Kaufman

Dowsing, being more or less demonstrable, is a particularly promising area for quantitative study of the paranormal. This paper presents an engineer's suggestions for measuring the phenomenon.

Before looking at the technological aspects of dowsing measurement, it is advisable to consider some of its subjective features. We can begin with the use of the terms "plausibility" and "implausibility." Prof. Ernest R. Hilgard said in a paper in Science Digest, November 1965, "To demonstrate something highly implausible requires better evidence than to demonstrate something plausible. Plausibility is only the myth used at a particular time and place to explain things which can never be adequately described." He stated that the scientific method was never intended to support plausibility but to regulate trial and error, because if the prejudice of the observer is the only criterion for judging the adequacy of the evidence, scientific research will be held back. To illustrate: suppose someone said "I can teach any of you to summon a rainbow within a matter of minutes." Before the development of spectroscopy this statement would have seemed implausible. But now, of course, all one needs is a prism. The point is that our natural caution in determining plausibility must be disciplined by openness.

It may fairly be asked, "Inasmuch as 700 books have been published on dowsing, UNESCO has conducted investigations, and the subject has received so much publicity —why hasn't the reality of dowsing been established and accepted?" Part of the answer is the psychological resistance encountered in all areas of parapsychology. At present, however, resistance seems to be declining. In periods of comparative intellectual stability, fringe phenomena must remain on the fringe. But in periods of transition and widespread anxiety, the search of many for a world-view leads to widening of the boundaries of the plausible. This widening process has been greatly accelerated even within the late 'sixties. By taking advantage of these changes, and by improved means of measurement, we may be able to "establish" dowsing despite the lack of complete repeatability.

Throughout most of the history of dowsing we had only what was called eyeball instrumentation, i.e., what can be seen by the unaided eye; and we had the result—whether water was found or not. On what could be seen, two people could not with certainty agree; one could say "I'm sure he let go of the forked twig" or "He moved his hands," while another would deny it. If water was found, one could not be sure what part was played by unconscious perception of geological factors. Instrumentation can go far to eliminating these uncertainties.

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The difficulties of understanding water dowsing are compounded by the various kinds of divining rods used and the different theories presented by dowsers themselves. Some use angle rods, the forked twig, or pendulums, perhaps with mysterious substances in them. I've seen one that looked like steel wool impregnated with oil, and pendulums that unscrew which have silver or gold in them. Too, dowsers are often sure that their results are caused by animal magnetism, electrical magnetism, gamma rays or the like. Faced with such explanations, scientists often dismiss the whole thing as foolishness or fraud. The result is obscuration.

Most interpretations fall into two groups. According to the first group, the answer is to be found in muscular action, either unconscious or deliberate. The dowser is twisting the coat hanger angle rods open or letting them fall forward. With the forked twig, it is said that the dowser is squeezing his hands together. The correctness or incorrectness of such explanations can be determined very easily with current biomedical instrumentation, such as electromyographic instrumentation, to find out if there is any change in either wrist or finger or arm muscular potentials. Such methods, however, are no longer necessary, as we shall see.

According to the second group of explanations, some external force is acting on the divining rod. Whether this force is of demonic or divine origin, as has been claimed, or is the work of discarnate personalities, is not scientifically determinable. If, however, the force *is* external in origin, it should be possible both to measure it and at the same time establish its externality, i.e., rule out muscular action.

The strain gauge bending beam* has been developed for this purpose, to be used with a forked twig (of any kind). One arm of the forked Y is clamped in the bending beam as shown in Figure 1. The device has two little felt patches, open on each side of the beam, and under them the strain gauges. If voltage is supplied and a bending force is placed across the strain gauge, an output voltage will be developed. No output will occur from the bridge unless the bend occurs across the felt section of the strain gauge bending beam because that is where the strain sensing element is positioned. Pushing below the gauge, e.g., with a thumb, will do nothing. The bending beam also incorporates a device for level or position measurement, a volume control potentiometer with a weighted

*A bar of metal of uniform cross-sectional area, like a metal ruler or yard stick. Fine wires (strain gauges) are cemented onto the bar on each side. These wires increase or decrease in electrical resistance when the bar is bent because it stretches or compresses them. The electrical variations may be used to measure the bending force across the length of the beam.

arm. This is wired up to indicate the angle of the beam and forked twig to the ground.

The effect of gravity on the forked twig was measured by holding the bending beam vertically and then horizontally. The weight hanging out on the strain gauge was on the order of four ounce-inches.* But when the dowser moved over what we will call an underground stream, the bending beam indicated a pull down with twenty-eight ounce-inches of force. The increase of twenty-four ounce-inches over gravitational force is a significant measurement, not a one-to-one signal-to-noise ratio.

The other arm of the forked twig lies on the open hand, as shown. This hand can be moved in any direction without putting a strain on the bending beam. Similarly, causing the twig to whip about does not give the kind of record produced by carrying the twig over a body of water.

Interestingly enough, Mr. Norman Evans, one of America's leading dowsers, has performed a similar experiment in Skokie, Illinois with a forked twig using two mechanical torque meters,† one on each end of the forked twig. When he walked over a body of water, the torque meters indicated 24 to 37 ounce-inches.

In the development of an explanatory hypothesis, it is significant to note that oil, for example, is searched for by such scientific instruments as magnetometers and gravitometers. A magnetometer measures the intensity of the earth's magnetic field. Passing over an oil field or over flowing water causes it to show an abrupt change in magnetism. Any kind of flowing plasma will produce a magnetic field anomaly by a phenomenon of "Magneto-hydrodynamics." Here is an example of a magnetic anomaly: You are walking along a field. The magnetism is uniform at some level until suddenly, at some point, it increases; you walk a few feet further and it decreases again, or perhaps goes up and stays at a plateau. This is a sharp change in the residual background. To begin with, then, in many geological features such as falling water or changes in earth density, tunnels, oil, magnetic anomalies exist.

Professor Y. Rocard, of the Academy of Sciences in Paris, has published a book entitled *The Dowser's Signal*. He has proved that people can detect magnetic anomalies between certain limited ranges; if they are outside of these ranges they cannot detect them. An explanation of the capability of man's biological organism to respond to a magnetic field has not been developed. Much research is, however, being conducted upon the influence of magnetic fields on biological organisms. The Library of Congress (USA) under an agreement with NASA, in 1961 prepared a Bibliography on the Biological Effects of

*Moment of a force; torque. A rotational or angular torque developed by a weight (ounces) applied at some distance (inches) from a restraining element. A hand turning a door knob is an example. The distance in inches from the center of the door knob to its periphery multiplied by the ounces used to turn the knob would be ounce-inches.

†A device which measures ounce-inches (or lower and higher torques, e.g., gram-inches or pound-inches).

Fig. 1. *The PK experiment utilizes a strain gauge bending beam, forked twig, and human carrier (author).*

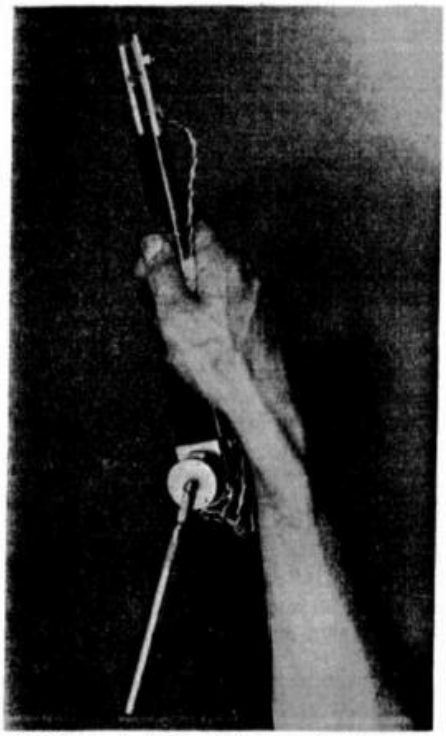

Fig. 2. *A close-up of the strain gauge bending beam. A metallic rod replaces the twig.*

Magnetic Fields, Dr. Robert Becker, M.D., Chief of Orthopedic Service VA Hospital, Syracuse, New York has directed the compilation of an up-to-date bibliography.

The movement of the twig still requires explanation, however. We can say it is an effect of psychokinesis, that is, the production or redirection of energy by the mind, to produce a kinetic effect in something separate from the body and its extensions. But what psychokinesis actually is, and even more, how it can interact with magnetism, is far from clear. The study of auras may cast some light on the subject.

One thing is certain, however: the amount of psychokinetic (if such it is) energy is great, and dramatically evident. I have seen a forked twig, one arm held with pliers and the other resting on an open hand, actually tear off in the pliers. Furthermore, the phenomena are easily accessible; about 50 per cent of the population can dowse, it is said by many investigators. This group is limited to an amateur status, in most cases, until practice has further developed capability.

Dowsing is clearly the most promising area for experimental study of psychokinesis.