
The detection of fraud and fakery

J. Randi
12000 NW 8th St., Plantation (Florida 33325, USA)

Summary. Fraud is often found in science, especially in what is termed, 'fringe science'. There are several reasons why scientists should be aware of the fact that they, too, can be deceived, both by subjects in experiments and by themselves. The will to believe is strong even among 'hard-headed' academics, and is often the factor that causes them to publish results that do not stand up to subsequent examination and/or attempts to replicate. In some cases, scientists would be well advised to consult with such experts as conjurors, when skilled frauds are in a position to mislead them.

Key words. Fraud; fakery; deception; faith healing; conjuring; parapsychology.

Scientists are very easily deceived. They think logically, extrapolate possibilities from evidence presented, assume (with a good probability of being right) certain aspects of the observed data and draw on their past experience in coming to decisions. This is to say that they act very much as all humans do, struggling with sensory input to derive new facts from it. But scientists do this with a certain authority and certainty born of their training and discipline. They are thus excellent candidates for being flimflammed by a clever operator who is aware of the fact that scientists seldom bring the human element into account.

Protons, grains of sand, cannon balls and planets behave themselves. They do the same thing, under the same influence, in essentially the same way each and every time. They are predictable, within definable limits. When they misbehave, the scientist perks up and is compelled to determine just why this has happened. If something new is discovered by these means, the parameters are redefined and we know something more about our universe.

One factor often overlooked is the human factor. I will postulate a simple situation: Let us suppose that a researcher has decided to check the quite accepted fact that mixing two parts of hydrogen with one part of oxygen and passing a spark through the mix will result in the creation of a drop of water accompanied by a minor explosion. The appropriate equipment is assembled, and a run of 10,000 trials scheduled. As expected, the first 700 trials result in explosions and water drops. At that point, a lunch break is called, and all retire from the lab. Upon returning to the experiment, the chief experimenter discovers that upon passing the spark, no explosion results and spectroscopic examination of the gas mixture shows it to be argon! Is the scientist justified in concluding that occasionally the hydrogen/oxygen mixture will combine to form argon rather than water? Of course not. Why not? Because: 1) It is well-established that elements under these conditions do not transmute; 2) Parsimony dictates another answer; 3) This experiment is very well repeated and has never had this result before, especially in such a short run; and 4) The one startling result was obtained immediately following a break in the experiment during which tampering with the apparatus was possible. That last condition says it all. A prank on the part of an associate is far more to be expected as an answer than a major breakthrough in alchemy.

In the parascience of parapsychology, a strong belief structure exists that predisposes the parapsychologist to ignore otherwise obvious factors that could provide a simple, non-extraordinary solution to a problem. Indeed, the very fact that a paradox presents itself is enough to fire up a parascientist to the publishing point. This is my First Axiom: In parapsychology, any evidence of a paradox is proof of the profundity of the phenomenon.

My Second Axiom follows swiftly: It is not the quality of the evidence, but the quantity of it, that really counts. This is often expressed in lay language as, 'Twenty thousand astrologers can't be wrong.' But what qualifies me, a mere amateur, to declare on these weighty matters? Let me explain. I am a conjurer (often mis-called, 'magician') and as such I have a very powerful,
that, "To further analyze [this phenomenon] would be declined to have the 'tears' examined by chemists, saying children or [sic] unction for the sick.' These authorities firmly was said by Church authorities to exude 'a very thin, oily variety, this one of a Virgin Mary painting in Chicago that too closely examined. The Christmas season of 1986 brought religious folks have always felt that their faith must not be investigate the evidence that is offered to support the claims. But there is a frightening tendency among those who embrace nate healing methods, "eye of newt or the head of a toad" material, but Holtzer hasn't heard about that fact, or choos- to ignore it. His criterion for whether or not a healer is the real thing further reflects his rather loose standards: "If you es to ignore it. His criterion for whether or not a healer is the material, but Holtzer hasn't heard about that fact, or choos-