Lying About Polygraph Tests

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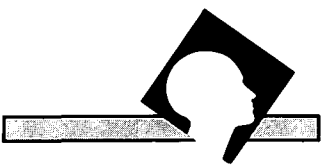
In every culture, lying is proscribed, and great efforts are made in attempts to overcome it. This is not so much because people dislike being misled, but because lies pose a threat to the stability of society. Lying is tolerated only when life or property is in imminent danger. The ultimate deception, however, comes from claims for the effectiveness of lie detection using modern technology. This is nothing short of the assertion that it is now possible to read other persons' minds through the expert use of an instrument called the polygraph.



Polygraph testing uses the jargon of science for legitimacy, but it properly belongs to pseudoscience.

In its most recent incarnation, the polygraph is a small suitcase-sized machine that can measure, and continously record on a strip chart, the following physiological variables: pulse rate; blood pressure; rate and depth of respiration; and galvanic skin response (GSR), also called electrodermal response (EDR), which is a measure of sweat production through electrical conductance.

The scientific basis for making these presumed lie-detecting measurements rests on the following premises: (1) that the transducers used in a polygraph are able to make, when properly calibrated and responsibly operated by a skilled operator, fairly accurate measurements of these variables, (2) that the physiological variables measured by a polygraph are related to physiological arousal, and (3) that psychological stimuli can be associated with these physiological responses.

No one seriously questions the first of these premises. The controversy swirling around polygraph tests focuses on premises (2) and (3) and the contention that it is possible to interpret them in ways that can detect deception. On this subject there is an extensive and, to a large

extent, a confusing literature: It ranges all the way from anecdotal to peer-reviewed scientific reports, performed with protocols as complex as those used in the clinical trials of new drugs. In general, it can be concluded from these reports that the anecdotal data tend to support the polygraph tests as an effective method of deception detection, while the doubts get increasingly more significant as one moves ever closer to carefully controlled clinical experiments.[1]

Although there are important differences in how polygraph tests are actually administered, with conflicting claims made about which procedures and methods are optimal in the detection of deception, they all generally include three phases: (1) the pre-test interview, (2) the questioning procedure, and (3) the post-test interview.

The *pre-test interview* is intended to generate the psychological climate essential to optimize the effectiveness of the examination to follow. It consists, in the main, of a usually successful effort by the examiner to convince the subject that the examination is conducted by an expert and that any attempted deception by the subject will become immediately obvious to the examiner. The pre-test interview also includes questions about whether the subject is under the influence of licit or illicit medication susceptible of affecting the results of the examination.

It is a remarkable fact that the medication assessment is almost never made the subject of independent verification by the collection and testing of blood and urine samples, thus resting solely on the word of a person whose credibility is the justification for the polygraph examination. The second part of a polygraph examination is the actual *questioning procedure*, which has been exhaustively reviewed by the leaders in the field, notably by Barland and Raskin and by Reid and Inbau.[2,3] This part of the examination begins with the subject being cuffed and strapped to the

device. The considerable resulting discomfort is eased every 15 minutes or so while the examiner changes charts.

These interludes provide the examiner with opportunities to ask the subject about his reaction to the questions posed and allow refinement of the questions to be asked next. The examiner also performs stimulation tests to further convince the subject of the accuracy of the polygraph examination. There are many variants of the "stim" tests, but the most common ones involve the use of playing cards. The examiner unerringly identifies cards secretly chosen by the subject, on the basis of questions and answers recorded by the polygraph. These stim tests sometimes involve deception by the examiner: the use of marked cards to ensure a perfect score, something he or she knows the unaided polygraph can never produce.

The examination strategy consists of asking questions intended to reveal deception by the subject. They usually include *relevant* questions, such as "Did you steal the $1,000?" or, in a security investigation, "Did you ever have a contact with any foreign intelligence agent?" Since there is no known physiological response unique to lying, it is necessary to continuously reestablish a baseline evaluation of responses against *neutral* or *irrelevant* questions, such as "Is your name Jones?" or "Is today Monday?"

There are also *control* questions intended to elicit guilty responses to questions about lying by even honest people, such as "Have you ever lied about your age?" and *concealed information* questions aimed at detecting whether the subject is familiar with information that only a guilty person would know. For example, if a stolen car was blue, several successive questions are asked, going through a list of colors. It is presumed that a distinctive polygraph response will be obtained when the examiner asks whether the car stolen was blue.

Actually, this phase of the examination is even more complex than that. There are several arcane strategies of questioning being endlessly debated by the polygraph community. We need not dwell on them here. They include zone of comparison (ZOC) tests, peak of tension (POT) tests, guilty knowledge tests (GKT), and modified general questions tests (MGQT). There is no consensus about which of these strategies might be optimal, because no credible database has ever been developed to evaluate this or any other significant issue involving polygraph testing.

The final part of the polygraph examination is the *post-test interview*. Releasing the straps and changing the charts, mentioned earlier, are opportunities, albeit strained, for verbal exchanges between examiner and subject. This helps the examiner not only to formulate questions but, more significantly, to form an opinion of the subject's truthfulness. At the conclusion of the examination, the examiner usually makes an on-the-spot assessment of the subject as deceptive or truthful, an opinion that the examiner shares with the subject. The exception to this rule is the federal government's evaluation of national security cases, in which an official review of the results must be made prior to disclosure to the subject.

If the subject is judged to have been deceptive, the examiner will attempt to elicit a confession. This is usually done indirectly, to facilitate the opportunity for the subject to clarify, explain, or confess the meaning of the responses elicited by the examiner during the polygraph examination. Although few examiners will admit it, a good judge of human behavior will override the polygraph charts and

generate a report that is more heavily weighed by the examiner's own perception of the subject. It can be argued in this context that nothing can substitute for an expert cross-examination, without the mumbo-jumbo associated with the use of the polygraph. This is a recognition of the fact that the best lie detector in existence since the dawn of human history has been, and remains, the perceptive human being. Alas, few polygraph examiners appear to fit that description.

Since the examiner is the key to the effective use of the polygraph, it is interesting to observe that very little attention has been paid to document a question that lies at the core of polygraph testing legitimacy: Who is the polygraph examiner and how, by whom, and where is he trained and accredited?

There are about six thousand people in the United States who call themselves polygraphers, and there are no formal licensing procedures for them. Anyone can put up a shingle, buy something simulating a polygraph, and conduct polygraph examinations on which people's livelihood, reputation, and freedom may depend. One national organization, the American Polygraph Association, has been trying, with largely indifferent results, to set standards for polygraphers. Only the U.S. government runs an international school for polygraphers, most of whose alumni are subsequently employed as polygraphers by the United States and its allies.

This school, claimed with some justification to be the best in the world, opened in 1951 and greatly expanded after 1981, is located in building 3165 of Fort McClellan in Alabama. Some three dozen students at a time, drawn mostly from the ranks of the FBI, the Secret Service, the National Security Agency, and the several military investigative branches of the U.S. and its allies, spend 14 weeks in training at the school. The first four weeks of lectures are on the subjects of law, semantics, ethics, physiology, pharmacology, psychology, and the operation, testing, and maintenance of the polygraph. This is followed by 10 weeks of actual practice, after which the successful candidate can conduct polygraph examinations for the government. By comparison, in most states at least a year's training is necessary to become a licensed barber.

Although polygraph evidence cannot be used in most courts of law, except by subterfuge, and polygraph testing as a condition of civilian employment has now been outlawed, the U.S. government still heavily depends on these examinations. The General Accounting Office (GAO) reported in 1987 that 2.2 million security clearances were held within 41 government agencies, exclusive of the NSA and the CIA. A significant proportion of these clearances were subject to polygraph examination. In the Department of Defense alone, for example, the number of polygraph tests administered more than doubled between 1981 (6,556) and 1985 (13,786). They exceeded 21,000 by 1987—in spite of the fact that there were 750,000 fewer federal contractors and workers with security clearances in 1985 than there were in 1984. In 1985, the U.S. government had 160 polygraph operators and had ordered 153 additional machines.

The heavy reliance on polygraph examinations in national security procedures has been reviewed, documented, and sharply criticized in several reports. A notable example is the one published by the U.S. House Select Committee on Intelligence of the 100th Congress. It concludes that

the rapidly increasing use of, and excessive reliance on, polygraph examinations since 1981 creates a false sense of security and represents a dangerous trend that may increase rather than decrease the risks to our national security.[4]

The central premise of polygraph testing, the psychological assumption that guilt can *always* be inferred from emotional disturbance, is considered to be implausible by the majority of knowledgeable psychologists in the field. The American Polygraph Association claims that studies of polygraph examinations yield accuracy rates of from 87.2 to 96.2 percent. Although these undocumented figures are dubious at best, if for the sake of argument we accept a 90-percent figure, this means that out of the total of 21,000 examinations reported by the federal government (not including the CIA and NSA) in 1986, 2,100 got away with their guilt or were innocent when they "failed" the test, and some of those who got away with false negatives (i.e., labeled as truthful and reliable) may, at this very moment, still hold sensitive government positions of trust.

But the ultimate irony lies in the well-established observation that polygraph examinations tend to err on generating substantially more false positive than false negatives. This means that truthful persons incriminated as liars by the polygraph will outnumber actual liars. Good advice would be that if you are innocent, never take a lie-detector test. But if you are guilty, by all means take one: you may be exonerated. Acceptance of polygraph testing is a peculiarly unique U.S. phenomenon, where the procedure is rarely questioned and is accepted at face value by most people. It is almost unknown in the rest of the civilized world.

This underscores the issue of polygraph tests' jeopardy to the basic constitutional premise that a person is innocent until *proved* guilty, that it is better to let a guilty person evade the net of justice than to punish a single innocent person. Nearly all parties to polygraph testing, including U.S. government authorities responsible for such examinations and the quasi totality of responsible academic investigators in this field, have taken the position that polygraph testing should not be permitted as a condition for gaining and retaining employment. The U.S. Congress, under the leadership of Senator Orrin Hatch (R-Utah), passed legislation now in effect making the use of polygraph testing for most civilian employment illegal.

Polygraph testing uses the jargon and attributes of science for legitimacy, but it properly belongs to pseudoscience. Its main justification for existence is that it *can* be effective in getting at the truth through *intimidation*. It is *not* the technical data that provides such a determination, but the interpretation given to the data by the polygraph *examiner*. Objective criteria to make such determinations simply do not exist and there is as yet no known reliable method to get at the truth by the application of scientific principles.

The debate about polygraph examinations has raged for more than six decades, and still no consensus has emerged on their effectiveness or their justification in detecting deception.[5] Until modern technology develops credible methods, if this is at all possible, polygraph tests will remain the subject of continuing controversy.

Notes

1. *Scientific Validity of Polygraph Testing: A Research Review and Evaluation.* (Washington, D.C.: Office of Technology Assessment, November 1983).

2. G. H. Barland and D. C. Raskin,

Validity and Reliability of Polygraph Examinations of Criminal Suspects, Report No. 76-1, Contract No. N1-99-0001 (Washington, D.C.: National Institutes of Justice, Department of Justice, 1976).

3. J. E. Reid and F. E. Inbau, *Truth and Deception: The Polygraph Technique*, 3rd ed. (Baltimore: William Wilkins, 1977).

4. *Report by the Permanent Select Committee on Intelligence, House of Representatives, 100th Congress*, Report No. 100-3 (Washington, D.C.: U.S. Government Printing Office, 1987).

5. W. G. Iacono and C. J. Patrick, What psychologists should know about lie detection, Chapter 17 of *Handbook of Forensic Psychology*, ed. by A. Hess and I. Weiner (New York: Wiley, 1986).

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