



By John A. Jenkins

CHARLES McQUISTON says he knows when you're lying.

McQuiston is one of the inventors of a machine called the psychological stress evaluator, PSE for short, which detects "lying" by analyzing minute changes in a person's voice.

He says his invention is 96.87 percent effective, and the supermarket tabloid National Enquirer has so much confidence in his ability to detect the truth that it has published the results of 90 stress tests he has conducted on the televised voices of political figures and Hollywood stars.

Yet, according to expert testimony before a Senate Judiciary subcommittee, when it comes to spotting the liars among us, the PSE is no more reliable than the toss of a coin. There is substantial evidence, in other words, that the PSE and other voice analyzers are utterly unreliable in differentiating between truth and deception.

"Sadat and Begin were lying when they appeared with Carter on television," McQuiston told me. "They said they were friends and they were going to reach accords. It's not true. They didn't mean it."

"Jimmy Carter lied about Bert Lance. And Carter lied in his State of the Union speech, when he said we were economically and militarily strong. That was not true. He didn't believe it when he said it," McQuiston said.

There hasn't been an honest president in more than a generation, McQuiston will tell you. He's tested recordings of each one, beginning with Franklin Roosevelt, "and every one of them is guilty of hedging on the truth somewhere along the line."

In the National Enquirer, McQuiston has posthumously exonerated Bruno Richard Hauptmann, executed decades ago for the kidnapping and murder of the Lindbergh baby, by analyzing the sound track of a bootleg movie of Hauptmann's testimony.

"Innocent," McQuiston says firmly. "He did not do it."

Insidious uses

Ask McQuiston whether his machine is reliable, and he'll produce a pile of scientific surveys which includes a test he conducted on the television game show "To Tell the Truth." The machine spotted impostors on the program immediately after each gave his name.

It might be easy to accept McQuiston's personality truth tests as harmless fun, were it not for the fact that his machine has insidious applications. It is, according to its makers, in use in hundreds of law enforcement agencies and corporations throughout the country. Criminal confessions are extracted with the PSE. Employees suspected of stealing are fired, and applicants thought untrustworthy aren't hired, when the machine calls them "deceptive."

Technically, lie detection is a misnomer.

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A 'Lie Detector' That Often Lies

'Voice stress' analyzers are accurate less than half the time, experts say

There is no foolproof way to tell when someone is telling a lie. About the best any instrument can do is detect when the subject of an exam is under stress.

The stress a machine records can be caused by a multiplicity of extraneous factors — fatigue, or a fight with one's spouse, for instance — as well as lying. When stress is detected, it's up to an examiner to question his subject to determine whether it's the result of a conscious effort to deceive. This is part of the lie detection technique.

So, even though the "lie detection machine" plays a mythic role in the lore of American criminology, and even though users of the polygraph and PSE often use the term to describe their machines, it's important to remember these limitations.

No permission necessary

Until recently, the only device that could be used in truth-testing was the polygraph, which measures changes in respiration, blood pressure and skin conductivity.

One of the principal drawbacks of that device, invented in the 1920s, is that subjects must agree to be hooked up to the machine; they must give their permission to be tested. Since there are those who would like to eavesdrop on our thoughts without our knowledge, it was inevitable that a wireless lie detector like the PSE would be invented.

"No obtrusive rubber hose around the stomach, no cuff around the arm here — a hidden microphone will do," explains Washington privacy crusader Robert Ellis Smith, author of the book, "Privacy, How to Protect What's Left of It."

There are several voice-stress analyzers on the market, but the one used most widely is manufactured by the firm McQuiston helped create, Dektor Counterintelligence and Security Inc. From its nondescript headquarters in a Springfield industrial park adjacent to the Capitol Beltway, Dektor has sold about 1,400 of the PSE machines, at \$4,850 each, since it began marketing them eight years ago. Its closest competitor, Law Enforcement Associates of Belleville, N.J., has sold about 300 of its similar Mark II voice analyzers.

McQuiston and his co-inventor, Allan Bell, are former Army intelligence officers. In the Army, they sought a covert alternative to the unwieldy polygraph for interrogating prisoners and testing the reliability of their intelligence agents and information sources. But when they settled on the voice-stress analyzers, the Army wasn't interested.

Even today, neither the CIA nor any other federal agency utilizes the machines. So both men retired about 10 years ago and set up

shop in Bell's basement. They began manufacturing the PSE in 1970, and turned it into a million-dollar business.

The device McQuiston and Bell invented is designed to detect a "microtremor" normally present in the human voice. With the PSE, the tremor is charted by a stylus on a paper tape.

PSE analysis is divided into two steps. First a tape is made of the subject's "yes" or "no" answers to pertinent questions. Then the tape is played back through the machine at one-quarter the normal speed, and the answers — which by now sound like croaks because of the slow tape speed — are charted.

When the microtremor is present, the stylus moves freely and erratically, and the subject is not considered to be under stress. But when the stylus creates a tight pattern of vertical lines, the microtremor is absent, and stress is supposed to be indicated.

Cops and corporations

Who uses the machines? Police and sheriffs' departments intent on cracking unsolved cases, and quite a few business firms concerned about the honesty of their employees. Drug stores and fast food chains, both especially hard hit by the estimated \$7.2 billion-a-year problem of employee theft, seem to be the most frequent business users.

Most of Dektor's clients want to remain anonymous, the company says. When I asked Dektor to name some of its customers, an aide produced a letter from a Tennessee state arson investigator who wrote that he believed in the device "100 percent, and there are many sheriff departments throughout this state that have seen the PSE zero in on some cases that had them backed into a corner." The official said that, with the machine, "you can successfully know the truth."

Both the Vienna, Va., and Howard County, Md., police use the machine, and Dektor has hired Howard County's former PSE examiner to teach others how to use it.

In Albany, Ga., county judge Asa Kelly writes into his probation orders that the probationer must submit to PSE tests any time he's directed to do so by his probation supervisor or other law enforcement officers.

McQuiston told me he has cancelled checks to prove that some labor unions have used his machine to clear members accused of dishonesty by management. But seven major unions which commented during the Senate hearings last year said they did not endorse forced lie detector testing for their members.

According to articles in trade publications, corporations which have used the instrument include Waldbaum's Inc., a New York

and New England supermarket chain; Cumberland Farms Dairy Stores in Massachusetts; Li'l General Stores in Florida; Jim Dandy Fast Foods in Texas; Shopwell Supermarkets in New York, and Gray Drug Stores, a large Cleveland chain. Business Week has reported that Kemper Corp. uses PSEs in Massachusetts to test tape recordings of suspicious auto insurance claims.

Less accurate than chance

Yet what those who either confess to the machine, or who are judged "deceptive" by the PSE, don't know is that the machine has a record of veracity that would make it the envy of a pathological liar. That, at least, is the consensus of lie detection experts who testified on a bill introduced by Sen. Birch Bayh (D-Ind.) to ban PSE and polygraph testing in employment. They said the machine is unreliable more than half the time.

A study done for the Army five years ago by Fordham University Prof. Joseph Kubis found the PSE accurate about 32 percent of the time. That's worse than random chance.

In a June 1978 article in the Journal of Applied Psychology, Frank Horvath, a professor at Michigan State University's School of Criminal Justice, found the PSE to be accurate 38 percent of the time — again, worse than tossing a coin.

David C. Raskin, a University of Utah psychology professor, said, "As far as I know, there is not a single respectable scientific study, and one that would meet the standards of publication in a scientific journal, which has shown the voice stress analysis technique to be any better than flipping a coin."

Malcolm Brenner, a researcher at the University of Oregon, told the subcommittee he had conducted an experiment in which students were offered money if they could fool either a polygraph or a PSE. None fooled the polygraph, yet all but one fooled the PSE, with the stress machine's solitary success "a result which would be expected by chance." Lest anyone question Brenner's qualifications to conduct valid PSE tests, he told the subcommittee he was a certified examiner, having received his diploma after a three-day Dektor course.

Bayh, who chaired the hearings, was incredulous. "Three whole days?" (Dektor has since increased its required training to five days.)

Its inventors proudly report that even the best liars cannot beat the PSE. "The highly skilled liar hits harder," Bell said. "You cannot beat the machine," McQuiston said. "The examiner will not allow you to defeat it."

Consider, though, my own experience with the machine. I asked Edward Kupec, Dektor's marketing chief, to test me. To five related questions, I lied twice and told the truth three times. When I lied, the machine acted as if I'd told the truth. And when I told the truth, the machine called me a liar.

After viewing the embarrassing results of the test, Kupec and McQuiston still maintained the test was, to use McQuiston's term, "conclusive." Kupec incorrectly pronounced all my answers truthful. And McQuiston insisted on giving me another kind of PSE test — one designed to measure my "peaks of tension" rather than truth and falsehood. On the second test, he said I showed the most tension when I repeated the initials IRS.

Two groups that have lobbied most actively for anti-PSE and anti-polygraph legislation — the Retail Clerks International Association and the New York Civil Liberties Union — can point to dozens of innocent victims of polygraph examinations, yet neither knows of a single instance where an innocent subject was found "deceptive" by the PSE.

"That's because nobody knows when it's being used on them," says Barbara Shack, associate director of the NYCLU. "People who would complain about lie detectors would never complain about PSEs, because they are being used surreptitiously."

Bayh's bill, which has been endorsed by President Carter, might limit the obvious potential for surreptitious use of stress detectors. Seventeen states, including Maryland and the District of Columbia, have enacted limitations or outright bans on lie detectors used for employment tests. But enforcement is a problem: How does one find out when the machine has been used?

Some witnesses who appeared before Bayh suggested that operators of the machines be subject to malpractice suits if they wrongfully label someone a liar. Now, those who take the exams are usually required to sign a release holding the operators blameless. Even that solution doesn't provide a guarantee against furtive use of the machines. Several years ago, the federal Privacy Protection Study Commission urged a ban on the manufacture and use of all lie detectors.

Bell has an answer to his critics. "There's a possibility of abusing anything, including religion," he explains softly. "Yes, there's always a possibility of abuse. What we do in this world of ours is look for the most favorable tradeoff." He will tell you, as an illustration of this, that some of his best customers are the police and military authorities in Middle Eastern nations.

In one such country, "there had been an assassination attempt on the king, and they had 700 suspects." Each was tested on the PSE, and "out of the 700, I understand they only executed 20. They probably would have wiped out half of 'em if they hadn't had some way to thin it out. Everything's relative."

