

Home

News

City & State

Star East

Star North

Hamilton County

Hendricks County

Johnson County

Obituaries

Commuting

For The Record

Lotteries

Nation/World

Politics/Govt.

Election 2004

Special Reports

Columnists

• Susan Guyett

• Ruth Holladay

• Pam Fine

AP State

AP Nation

AP World

AP Politics

Opinion

Business

Sports

Entertainment

Indiana Living

Obituaries

Weather | Traffic

Customer

Services

Subscriber

Services

INtake

Community

Fact Files

STORY SEARCH

7 days= Archive

CITY & STATE

Voice analyzers draw praise, flak

Advocates call them valuable detection tools, but vocal critics contend they're unreliable.

By John Tuohy
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Police departments across Indiana and the country are spending thousands of dollars apiece on a truth verification device that some scientists say doesn't work.

The Computer Voice Stress Analyzer, designed by a former Indianapolis Police Department officer, claims to help officers assess truthfulness by measuring changes in one's voice.

Eighty-five Indiana police departments, including IPD, use the machines, which start at \$10,700 each.

The designer, Charles Humble, now is chairman and CEO of the National Institute for Truth Verification, which makes the machines. In its literature, the Palm Beach, Fla., company touts it as "a very reliable investigative tool for verifying statements of witnesses, denials of suspects and for determining the validity of allegations made against police officers."

But several scientific experiments have shown the machine, which went on the market in 1988, is no more than 50 percent reliable -- in other words, a coin toss.

In addition, the manufacturer conceded in a product liability lawsuit in California that the machine can't measure whether someone is lying.

But more than 1,400 police departments nationwide have bought them and paid to train their officers to use them.

Last summer, 25 officers attended a six-day training seminar at IPD's police

TINY VOICE TREMORS ARE BASIS OF COMPUTERIZED TEST OF LYING
Computerized voice stress analysis is a new technology being used by police and investigators.

How it is supposed to work

When a subject is lying, the body's involuntary nervous system triggers a tremor in the subject's voice, inaudible to the ear. The computer measures this change and displays a graphed response.

The equipment

- A typical system includes a microphone, tape recorder, laptop computer and specialized voice analysis software.
- Each interview's results are stored as voice tapes, as digital files and as hard-copy prints.

Results plotted as wave forms

In this case study, an interviewer is trying to determine whether the test subject had taken a man's .22 pistol from the drawer where it was kept.

- Question: "Did you take the gun?"
 - Response: "No."
- The wider wave form indicates vocal stress. This is called a "blocking pattern."
- Question: "What is your phone number?" This is a control question, designed not to provoke an emotional response.
 - Response: (The subject gave his number.)
- The narrow wave form indicates no stress. This is called a "diagonal pattern."

Sources: National Institute for Truth Verification, University of Missouri at Rolla

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academy put on by the machine's manufacturer. David Hughes, executive director for the company, said more than 5,000 officers nationwide have been trained to assess the machine's findings.

"If these don't work, why do so many police departments use them?" he asked.

Doesn't work, critics say

In a 2003 study, the National Academy of Sciences concluded there was no evidence the machines detect lying.

"This research and the few controlled tests conducted over the past decade offer little or no scientific basis for the use of the Computer Voice Stress Analyzer or similar voice measurement instruments as an alternative to the polygraph for the detection of deception," the academy found.

Frank Horvath, a professor of criminal justice at Michigan State University, said about 25 studies have "shown that these devices have no merit whatsoever."

While polygraphs measure three biological reactions -- changes in pulse, heart rate and body perspiration -- the voice test records only changes in voice -- so-called "microtremors" in the larynx.

By measuring only one response, voice tests would appear easier to fool than the lie detector, Horvath said.

"It's very easy to change one's voice," he said. There is no proof microtremors exist, he added, and "even if they do, how can it be shown that they relate to stress or deception?"

Polygraph accuracy ranges from 70 percent to 90 percent -- not enough to be admissible in court, but better than voice tests.

Police say the reliability of the voice machines is secondary. They like them because they're a valuable tool in getting confessions.

"It is a big psychological boost for us," said Lt. Joe Mason, an IPD detective. IPD has four machines and about 15 officers trained to use them.

"Is it accurate? Who knows? Is it admissible in court? No. Is a polygraph admissible? No."

Mason said all four machines have been donated to IPD, and most of his officers train for free when IPD hosts the seminars.

Voice analyzers have several advantages over polygraph machines, backers say, including:

- The tests are portable. Polygraphs require several wires be hooked up to a person; voice tests need only a microphone.
- Voice tests can be given on the spot. Detectives sometimes must wait several days to give a polygraph exam because police departments have few trained examiners.
- They can elicit confessions from suspects even before they are administered because of the perception that they work.

A useful tool, others argue

Advocates of voice machines stress that polygraph tests have been around so long that many people know how to fool them.

"Some guys agree to take a polygraph because they know they'll beat it and walk out right away," Mason said.

"You can go anywhere on the Internet and read how to beat it," Hughes said.

The Web site for the voice machine's manufacturer carries dozens of testimonials from police chiefs and detectives crediting the tests with prompting confessions.

Humble said much of the opposition to the test comes from polygraph examiners protecting their turf. And, he said, the academics who criticize it have never worked with the machine.

"You can listen to a professor at IU, who has never even seen one, spout off about it -- or you can talk to police in the field who are trained and know how it works," Humble said.

Hughes said tests on the analyzers have been flawed because they haven't measured people in real-world circumstances.

Researchers disagree.

"These are complete nonsense and dangerous," said Richard Ofshe, a professor at the University of California-Berkeley and a leading expert on police interrogations. "Any detective should know these aren't reliable. If they don't, they're incompetent."

Some observers say it is unethical for police to promote the tests as accurate.

"This seems like it could be part of a disturbing trend in cases in which it is ruled that police trickery is acceptable," said David Cook, chief public defender in Marion County.

In San Diego, murder charges were dropped against two teenagers after it was determined their confessions were coerced after they flunked voice stress tests.

→ One of the boys sued the National Institute for Truth Verification, claiming the analyzer was used to get the false confession.

→ In a court filing, the manufacturer said: "NITV acknowledges that the CVSA is not capable of lie detection and specifically cautions its users regarding the proper use of the device."

→ Humble, a trained polygraph examiner, said his company doesn't claim the machine detects lies.

"There is no such thing as a lie detector," he said. "These are stress monitors. This is an investigative tool. It helps guide the way."

But, countered Ofshe, flunking the stress tests breaks the spirit of innocent suspects.

"The operator hypes that these are infallible, and the innocent person is banking on vindication by taking the test," he said.

"When they are told they failed after putting so much faith in them, they falsely confess to get a good deal."

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