Voice-Based Lie Detectors

For several years police departments and federal agencies have been the target of determined marketing efforts by the makers of voice-based lie detectors. The principal sales pitch since the early 1970s has been that their particular voice device is more accurate and cost less than the polygraph (or any of the competing voice lie detectors). These sales pitches appeal to cash-strapped departments and agencies, and if true, the devices would quickly come to replace the current gold standard, the polygraph. There are at least 10 different voice devices sold in the US, freeware packages are on the Internet, and a burgeoning list of smartphone applications. Why, then, have voice devices not come to surpass the polygraph in law enforcement and government over the past 40 years?

It is a fact that voice lie detectors trail far behind the polygraph, even in sheer number of units. And though some voice device manufacturers claim to have sold X number of their devices to various organizations, a significant number of departments discarded them quickly after discovering that the reality of the systems fall far short of what manufacturers had promised.

Voice device manufacturers would blame their limited market impact on the bias of polygraph examiners, but the truth goes deeper. The first reason for the failure of voice lie detectors to capture the field is simple: they are highly unreliable. More than that, they have been discredited by a large and expanding body of independent scientific research. This is the main reason they are banned by the US Department of Defense. With such dismal accuracy they are little more than very expensive interrogation props. See the table below for the published non-manufacturer's research on voice-based systems.

Perhaps the US National Academy of Sciences (2003) said it best:

Overall, 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 practical performance of voice stress analysis for detecting deception has not been impressive.

A second reason the sales of voice devices have been limited is that diligent departments have learned there really is no cost savings over the polygraph in terms of instrumentation and training. Indeed, their bottom lines are almost the same. Claims otherwise are simply false, as the following comparison shows:

Despite miraculous claims for what voice devices can do, there are two things they can't: detect deception accurately and save tax dollars. This does not even consider the hidden cost of litigation some departments have recently experienced due to errors caused by voice stress devices.

When the facts are known, it's clear why the polygraph is still the leading technology for deception detection. Again, to quote the National Academy of Sciences: *Some potential alternatives to the polygraph show promise, but none has yet been shown to outperform the polygraph.*

Summary of Published Voice Lie Detector Research

Device	Research Sponsor	Year	Results
PSE	US Army	1973a	**No better than chance**
PSE	US Army	1973b	**No better than chance**
PSE	Michigan State University	1978	**No better than chance**
PSE	Royal Ottawa Hospital (Canada)	1979	**No better than chance**
PSE	University of Oregon	1979	**No better than chance**
PSE	Michigan State University	1979	**No better than chance**
PSE	Ford Foundation/ Israeli Police	1980	**No better than chance**
PSE	Michigan State University	1983	**No better than chance**
PSE	Israeli Police	1985	**No better than chance**
PSE	U of Florida	1987	**No better than chance**
PSE	Kansas State University	1987	**Unreliable**
Mark II	Texas Tech University	1990	**No better than chance**
CVSA	Department of Defense	1995	**No better than chance**
CVSA	Department of Defense	1996	**No better than chance**
CVSA	Department of Defense	1996	**No better than chance**
CVSA	Department of Defense	2000	**Unreliable**
Vericator	Department of Defense	2002	**Low reliability/validity**
Diogenes	Department of Defense	2002a	**Did not detect deception**
Vericator	Department of Defense	2002b	**Did not detect deception**
TrusterPro	Johannes Gutenberg University	2006	**No better than chance**
CVSA	Department of Defense	2006a	**No better than chance**
LVA	Department of Defense	2006b	**No better than chance**
CVSA	Department of Justice	2007a	**No better than chance**
LVA	Department of Justice	2007b	**Low validity**