

Horvath, F. (1982). Detecting deception: The promise and the reality of voice stress analysis. Journal of Forensic Sciences, 2, 340-351.

Horvath (1982) evaluates the voice stress analysis method in the detection of deception. He reviews research studies that examined the reliability and validity of voice analysis devices, such as the Psychological Stress Evaluator. Horvath's paper is organized with the following sub-categories, and the present summary will follow his organization: the microtremor theory, the detection of stress, the detection of deception in laboratory studies, objections to laboratory studies, and the detection of deception in field studies.

The PSE and other voice analysis devices are designed to capture voice changes that may be related to stress in the act of deception. The voice stress analysis is based on the theory that there is an inverse relation between stress and the frequency modulation in human voice, and that voice analysis devices are capable of detecting imperceptible changes in the frequency modulation. Some studies directly examined the theory and assumption of the voice stress analysis, and provided no evidence that there is a specific relation between stress and the frequency modulation, or that stress actually contributes to changes in the frequency modulation.

Voice analysis devices have also been tested whether or not they could actually measure the level of stress. Although voice analysis devices were able to detect stress under limited conditions, the performance was not consistent, and overall results did not provide convincing evidence. Furthermore, many laboratory studies have been conducted to examine the performance of voice analysis devices in the detection of deception. The laboratory studies consistently showed that the standard polygraph method performed better than the voice stress analysis, and that the voice stress analysis did not perform better than the chance level. Although evidence from the laboratory studies is strong, it is not free of objections. The main objection to laboratory studies is that they do not create a real sense of jeopardy, and consequently, not enough stress is created for the voice stress analysis to function optimally. To defy the objection, the voice stress analysis has been tested in a field setting, and compared to the standard polygraph method. Like laboratory studies, it was found that the voice stress analysis did not perform better than the chance level. Moreover, the comparison to the standard polygraph method revealed that there was no reliable correlation between the voice stress analysis and the standard polygraph method. Thus, Horvath (1982) argues that there is no evidence that the voice stress analysis actually provides any information about stress or the act of deception.