

Kubis, J. F. (1973). Comparison of voice analysis and polygraph as lie detection procedures (Contract DAD05-72-C-0217). U.S. Army Land Warfare Laboratory, Aberdeen Proving Ground, M.D.

Kubis (1973) examined the Psychological Stress Evaluator (PSE) and the Voice Stress Analyzer (VSA) in the detection of deception. Both the PSE and the VSA are designed as a lie detector based on the theoretical assumption that the act of deception creates stress, and that stress leads to changes in human voice. Voice analysis devices are supposed to detect the changes in voice that may be related to stress in the act of deception. Kubis (1973) conducted a study using a mock crime paradigm, in which participants served as a thief, a lookout or an innocent bystander, and the PSE, the VSA and the standard polygraph method were used to identify the role that a given participant played.

A total of 174 participants were assigned to play a role of the thief, the lookout or the innocent bystander. Participants who played a thief were told to enter a room and steal \$21 from a bag in the room. Participants who played a lookout were asked to help the thief by making sure that no one would see the thief stealing the money. Participants who played a bystander were simply informed that an incident of the theft occurred. Moreover, thieves and lookouts were instructed to lie about any questions regarding their involvement in the theft, while bystanders answered all questions truthfully.

The standard polygraph method produced the overall accuracy of 52% to 76% in the identification of roles that participants played. In all cases, the accuracy by the standard polygraph method was better than the chance level of 33%. By contrast, the PSE showed the overall accuracy of 32% to 38%, and none was better than the chance level. Similar results were found for the VSA. The overall accuracy was 34% to 43%, and did not exceed the chance level accuracy. Thus, not only did the voice stress analysis perform worse than the standard polygraph method, but also the voice stress analysis did not exceed the chance level. The present study provided no evidence to support the validity of the voice stress analysis in the detection of deception.