

Horvath, F. (1979). Effect of different motivational instructions on detection of deception with the Psychological Stress Evaluator and the galvanic skin response. Journal of Applied Psychology, 64, 323-330.

Effects of motivation and strategy on the Psychological Stress Evaluator (PSE) were examined in the detection of deception. The PSE is designed to capture imperceptible changes in voice that occur as a result of stress. The PSE processes taped-recording of vocal responses, and creates a display of vocal changes related to stress. Evidence for the validity of the PSE is very mixed, and some researchers have suggested that the PSE is not sensitive to a low level of stress. Although the PSE and other polygraph measures are based on physiological data, a low level of motivation and an intentional strategy could make it more difficult to detect the act of deception. So, the present study examined effects of motivation and strategy in the detection of deception. As a comparison to the PSE, the galvanic skin response (GSR) was also collected.

To examine the effect of motivation, participants in the present study were told that they would receive a credit toward their class only if they succeed in the assigned task (i.e., high motivation). Then, the GSR data in the present study were compared to GSR data from Horvath (1978) who simply instructed his participants that they would receive a credit at the completion of the experiment (i.e., low motivation). Then, to examine the effect of strategy, a total of 64 participants were assigned to the “be-detected” condition or the “avoid-detection” condition. Although all participants had to produce “no” responses, the goal in the “be-detected” condition was to have the examiner detect a deceptive response, while the goal in the “avoid-detection” condition was to keep the examiner from detecting a deceptive response. The PSE and GSR data were collected in both conditions. In the study, participants chose a number from a set of 5 numbers. In two interview trials, they were to respond “no” to all questions regarding any numbers, including the one they chose.

Two trained examiners evaluated the PSE outputs and the GSR data, and an additional independent examiner evaluated the GSR data. The accuracy rate based on the PSE was not better than the chance level of 20%. It was 19.5% for the first trial, and 17.2% for the second trial. The detection rate was higher in the “avoid-detection” condition than in the “be-detected” condition. By contrast, the accuracy rate based on the GSR was better than the chance level. It was 52.3% for the first trial, and 50.8% for the second trial. There was no clear effect of strategy, but the detection rate tended to be higher in the “be-detected” condition than in the “avoid-detection” condition. A comparison to Horvath (1978) revealed that a higher level of motivation led to a greater rate of GSR’s. Thus, the PSE did not perform better than what was expected by chance, nor did it perform as well as the GSR. A higher level of motivation led to a greater rate of GSR’s, but the type of strategy showed a different pattern of effects between the PSE and the GSR.