

Analytical review of validated polygraph techniques

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Introducing typical differences between testing in psychology and forensic psychophysiology, the main metric characteristics are described. A comprehensive taxonomy of polygraph techniques is presented for the first time in Slovenian scientific publishing. The non-weighted overall accuracy for different polygraph techniques was calculated, based on published validity studies in recent decades. The analytical overview includes studies referring to known and accepted polygraph techniques, which divided tested subjects into deceptive and non-deceptive subgroups, with a known "ground truth" (outside criterion) and using a numerical scoring system, but not with a computerized algorithm administered.

The results shown in Tables 4-8 indicate that the ASTM criterion is only met by Utah ZCT, with Federal ZCT missing the threshold by 1 per cent point. For investigative use of polygraph method, the administration of Federal ZCT, Reid Technique, Concealed Information Test and Relevant-Irrelevant Screening Test are admissible. The author expects that future validity studies may produce rather different outcomes, since using decision rules significantly increases the accuracy of the polygraph examiner's decisions and therefore the accuracy of the technique in question. Overall accuracy (Table 9) may be a function of validity research conducted so far, rather than the validity of polygraph techniques included per se. It does not expand on proven and accepted principles of conduct in the polygraph field, which should be known and obeyed.

Key words: validity of polygraph techniques, taxonomy of accurate approaches in deception detection, comparison question test, concealed information test, decision rules, accuracy of polygraph examination, polygraph, psychophysiology

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