

Research challenges of contemporary psycho-physiological veracity examination using a polygraph: the development of good practice on scientific bases

Polona Selič, Ph.D. in Psychology, Assistant Professor of Crime Investigation, Research Fellow at the Faculty of Medicine in Ljubljana and at Institute for the Psycho-Physiological Studies PARES, Celovška 280, Ljubljana, Slovenia

The research field of psycho-physiological veracity examination using a polygraph is shaped by several factors - analyses, the reports and recommendations of the National Research Council, the requirements of the American Society for Testing and Materials and the needs of practitioners (polygraph examiners) in the private sphere, in the detection, prosecution and judicial processing of criminal offences, and in ensuring national and international security.

Field studies based on true cases consistently establish that psycho-physiological veracity examination using a polygraph is more efficient in the detection of deception than in the identification of those who are sincere. More sensitive techniques for the detection of deception (in comparison to the techniques of identification) are a result of the rules of evaluation of psycho-physiological responses, decision rules, the range and positioning of questions and the object of measurement; however, multi-issue tests, in which positively false estimates are considerably more frequent, are ever more (justifiably) subject to criticism. Single-issue tests are more reliable and balanced, and have a smaller probability of mistake, i.e. a false positive estimate. According to results established so far, race and gender do not have any impact on individual components of the record of psycho-physiological responses. The rate of correct estimates (of deception or the absence of detection) depends on the number of repetitions of the test, which must be (according to recommendations) repeated two more times in the case of an uncertain assessment after three charts.

The introduction of the Marin Protocol for the use of the polygraph method in judicial practice has stimulated the replacement of standard decision rules with decision rules used in the evidentiary procedure. Evidentiary decision rules reduce the share of uncertain estimates to less than 20 percent and increase the average accuracy score to more than 86 per cent, thus assuring a balanced assessment of responses by those who deceive and those telling the truth. Standard decision rules apply to criminal investigation (and to the pre-trial stage), because they increase the sensibility of the polygraph method to deception and are not burdened by the likelihood of falsely negative estimate.

Key words: detection of deception techniques, techniques of identification, multi-issue tests, single-issue tests, numerical evaluation, standard decision rules, decision rules in criminal procedure, Marin protocol, falsely positive estimate, falsely negative estimate

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