

Model Policy for Algorithm Use in Evidentiary

Polygraph Examinations

Approved March 2, 2024

Purpose

To provide guidance for the inclusion of automated data analysis in decision-making to improve accuracy and reliability of polygraph results intended as evidence in courts of law.

Background

Decades of research in a variety of fields have consistently found human judgment is variable, both within and across individuals, and that it covaries with data complexity. Polygraph data are often quite complex, a characteristic that leaves the human analytic process vulnerable to the influences of bias, experience, mood, fatigue, expectancy, institutional and social pressures, and quality of training, among other factors. The effect of these influences is to introduce noise into the decision-making process and with it the threat of compromised accuracy.

Peer-reviewed and replicated research has shown that some automated algorithms can meet or exceed the human experts in polygraph decision making. These systems are also known to be more consistent than are humans. Automated analysis offers the polygraph profession an opportunity to both increase the validity and reliability of decision making, if properly implemented. The goal of this Model Policy is to guide users toward best algorithm practices for evidentiary polygraph examinations.

Standards

1. Examiner
 - a. The examiner is responsible for:
 - i. Forming polygraph decisions based on properly weighted psychophysiological data and information.
 - ii. Editing of artifacts and anomalies in the data, with assistance from available automated tools.
 - iii. Use of validated methods of analysis appropriate to the testing technique and format.

- iv. Maintaining an understanding of the operational procedures for using the automated tools chosen to evaluate the polygraph data.

2. Automated Algorithms

- a. For the purpose of this Model Policy, any automated algorithm used to evaluate polygraph data from an evidentiary examination:
 - i. Must have been subject to two or more validation studies, and the results published in a peer-reviewed journal.
 - ii. Must identify its features, mathematical transformations, and decision rules.
 - iii. Must demonstrate an accuracy required for Evidentiary Examinations in the American Polygraph Association Standards of Practice.
 - iv. Must have a point of contact at companies that offer the algorithm to address technical questions from users.

3. Integration of Automated Analysis into Decision-Making

- a. The testing examiner must consider the results of a properly selected and implemented algorithm when forming a polygraph decision.
- b. A psychophysiological detection of deception (PDD) algorithm intended for use in field practice shall be an adjunct basis of information where the PDD field practitioner shall ultimately formulate a conclusion about deception or truth-telling. It is not uncommon for PDD field practitioners to analyze PDD test data using multiple analysis methods, and this includes the potential for disparate results among different probabilistic methods or statistical models.
- c. When disparate analytic results are observed a PDD field practitioner should make reasonable efforts to identify the source or cause of the discrepant analytic results (i.e., artifacts, unstable or atypical physiological data, etc.).

4. Reporting Analytic Results

- a. A PDD field practitioner should formulate a classification of deception or truth-telling based on the method of analysis which they conclude to be the most robust and reliable for each examination.
- b. A PDD field practitioner should not be required to report the analytic results for methods that do not concur with their reported conclusions.