

(b) When there are differences in the behavioral codes of the subject and interrogator. Such differences may separate people in different cultures, or people of different social (or political) status in the same culture.

(c) When the subject attempts to "beat" the polygraph by controlling his breathing or cardiac response, by suppressing his memory, or by feigning a mental attitude, with or without the benefit of training, to produce such effects.

(d) When the subject has used drugs and, possibly, hypnosis to modify his physiological responsivity.

With such possibilities in mind, a polygraph examination can lead to three undesirable results:

(a) False positives: In which it is concluded that a person is attempting deception, when this is not the case.

(b) False negatives: In which it is concluded that a person is not attempting deception, when this is not the case.

(c) Indeterminate: When the examiner recognizes that he cannot make a reliable judgment about deception or truthfulness.

Among these three categories, indeterminate results need not confuse the examiner because he knows that some additional step, such as a reexamination or a more careful background investigation, must be taken to resolve the uncertainty. Overall accuracy should be increased when the examiner is free to employ the indeterminate category, although this obviously produces fewer resolved cases.

Kubis (1950) achieved a confirmed accuracy of about 90 percent but also made 10 percent inconclusive judgments, a larger fraction than is generally reported. Lee (1953) reports 98 percent accuracy and no inconclusive determinations, while Inbau and Reid (1953) report 95.6 percent accuracy and 4.4 percent inconclusive determinations. Although there are little data to document the errors that actually occur in lie detection, there appear to be some false positives (about 2 percent according to Trovillo (1951) and Lee (1953) and fewer false negatives (but no data appear on this point). In terms of crime, it is believed that some guilty might escape but very few innocents would be punished.

(1) *Contraindications to use of the polygraph*

Lie detection experts¹² point out that a polygraph examination should not be conducted during certain transient states of a individual, such as, for example:

Excessive fatigue.

Prolonged interrogation.

Physical abuse.

Extreme nervous tension.

Evidence of drugs, especially tranquilizers and stimulants.

Sub shock or adrenal exhaustion.

Fear of detection of some other offense not related to this interrogation.

A similar restraint applies when long-term physical or psychological disorders are present:

Excessively high or low blood pressure.

Heart diseases.

Respiratory disorders.

Hyperthyroidism.

Mental abnormalities.

Feeble-mindedness.

Psychoses.

Psychopathic personality.

Any of these conditions precludes an effective examination because it introduces into the record response characteristics which are not the result of the examination itself. The professional integrity of the examiner would require him to refuse to examine individuals in whom such conditions are known to be present because an adequate examination could not be conducted. If an examiner did not know this in advance, he might detect certain unusual characteristics in the record which could lead him to terminate the examination as inappropriate under the circumstances. Various test procedures, such as repeating a test, or the "peak of tension" technique are intended to guide and alert the examiner to such effects. One obvious difficulty is that some of these conditions are not readily apparent (e.g., psychopathic personality or presence of drugs) or may not be known at the time of the interrogation. Another is that some interrogators believe they can handle every kind of case (they use the phrase "break

¹² Inbau and Reid (1953), pp. 64-99; Lee (1953), pp. 126-132.