

There are two exceptions to the general statement of inadmissibility:

(1) Judges in trial courts have admitted polygraph results when both parties in a trial agree to take such a test, agree on the examiner, and with their attorneys, sign a stipulation agreeing in advance to the admission of the examiner's testimony on the same basis as other expert testimony.

(2) Some trial courts have admitted test results as evidence but whenever appeal has been made to higher courts, the latter have held that the test results are not admissible. Wicker (1953) cites 16 such cases.

A person cannot be forced to take a polygraph examination against his will and, in any case, it is doubtful that an effective examination could be accomplished on an uncooperative person. Adequate precedents have established that measurement of physiological processes and biochemical analysis of blood and urine for alcohol are not *per se* self-incriminating. However, since a person cannot be forced to testify against himself, neither can he be coerced into providing samples against his will. Thus, it is possible that the results of lie detection tests to which one has submitted voluntarily can, when and if there is greater agreement as to their validity, be introduced as evidence in legal proceedings.

The New York State Bar Association has sponsored legislation which would permit a court to order any party or witness to submit to lie detector tests and permit the results of such tests to be received in evidence on an issue of deception (Chatham, 1951). Polygraph examiners in New York, Illinois, California and the District of Columbia have supported legislation to establish licenses and standards for civil practice. Some labor unions have sponsored legislation to ban the use of the polygraph as a condition of employment. No attempt at legislation or licensing in behalf of the polygraph has yet been successful. In Boston, an act bans the use of the polygraph as a condition of employment.

Before proceeding with an examination, it is customary for the polygraph examiner to receive a signed and witnessed statement that the person who takes a test does so on his own free will. The agreement form reduces the opportunity of a disgruntled subject to claim that he had been coerced to submit to a polygraph test. The basis for this in military law is Article 31 of the Uniform Code of Military Justice which directs that no person subject to the Code shall interrogate or request any statement from an accused or a person suspected of an offense without telling him the nature of the accusation and that any statement made by him may be used as evidence against him in a trial by court-martial (Everitt, 1955). Thus, a person accused by the military has the right, as do those in civil life, to refuse a polygraph test. In one activity, the person to be tested executes a waiver which is usually witnessed by the polygraph examiner alone; in other activities, two witnesses and the examiner must sign before the examiner is authorized to proceed.

3. LIE DETECTION EQUIPMENT

Current lie detection equipment measures simultaneously three physiological responses:

	Device	Method of sensing
Physiological response: Breathing pattern.....	Pneumograph.....	Corrugated rubber tube around chest.
Blood pressure and pulse.....	Cardio-sphygmomanometer...	Pneumatic pressure cuff around upper arm (or around wrist and forearm to minimize discomfort).
Skin resistance to external current.	Psycho-galvanometer.....	Finger or palmar surface electrodes.

The phrases "skin conductance," "electrodermal skin response," "psychogalvanic response," and "galvanic skin response" are used interchangeably to refer to the same phenomenon. In this paper, we will use only the phrase "galvanic skin response" and the letters "GSR."

Recent developments in medical electronics have made it possible to measure the breathing pattern, blood pressure, and pulse with electrical devices that are more accurate than the pneumatic ones which are in current use. It is also possible to interpret physiological responses by the use of automatic data processing equipment. The application of such procedures to lie detection is just beginning to be explored.