

and to probing questions could permit a useful degree of discrimination between deceptive and truthful responses.

It is undoubtedly true that the measurement of physiological responses can be used to indicate the presence of subtle emotional states in many and perhaps in most people. What is not as well known is the accuracy with which such objective measures can indicate that an individual is attempting deception. This problem exists because a person being interrogated may be upset but not guilty. He could be upset, for example, by the interrogation procedure itself or by the aggressive manner of the interrogation. He could be embarrassed by the exposure of personal information not related to the purpose of the interrogation. The problem becomes one not of determining whether the person is responding emotionally but *why* he is responding emotionally.

The history, as well as the theory, method, and legal aspects of lie detection have been described elsewhere (Inbau and Reid (1953),¹ Trovillo (1939), Marston (1938), Lee (1953), Larson (1932)) and will not be summarized here except to assist the reader.

The basic method of lie detection and its associated equipment have been in use for about 50 years and much has been written about it. Nevertheless, few data are available at the present time concerning the effectiveness of lie detection. The existing data are not easy to interpret. This is due principally to the fact that lie detection equipment operators, primarily in police, civil, and military security organizations, have not collected objective information concerning their methods and their results and probably do not appreciate the importance of doing so. On the other hand, few scientists have shown any interest in performing research on lie detection and, therefore, little has been done to clarify the problem. The inference that our knowledge about the effectiveness of lie detection is inadequate probably will be challenged by most polygraph examiners. The simple fact is that the data necessary to verify the results are not available. The use of lie detection methods has increased greatly over the last 10 years and perhaps this situation is now ready for improvement.

At one time it was believed that lie detection equipment provided direct evidence of lying. This claim is no longer made explicitly though the equipment is still referred to as "the lie box." Now, it is recognized that the equipment measures physiological responses, while it is the operator who infers deception from the physiological and other data. It has become known that fear of detection of deception is not the only emotion that may be encountered during an interrogation since other emotions, such as resentment or anger, can also be present. The individual being interviewed may be embarrassed or feel guilty because of personal experiences not related to the subject of the interrogation. The presence of such emotions could contaminate an inference about attempted deception. The polygraph examiner attempts to identify a pattern of emotional responses which recurs only with a specific category of questions and it is precisely the accuracy with which this function can be performed which has not been objectively determined.

Lie detection equipment can be regarded only as an adjunct to, and not the sole means of, conducting an interrogation. Apart from the equipment, many other factors affect the outcome, such as the method of interview, expertness, and detachments of the examiner, and the accuracy of background information used for comparison with the interview results. Each affects the accuracy of an inference as to whether or not the polygraph record indicates deception. Such matters will be examined in this report.

A. METHOD OF STUDY

For the purpose of this study, visits were made to many organizations which employ the polygraph to discuss the procedures and to examine evidence for the effectiveness of this method. Both Government and non-Government agencies were visited. The Government organizations visited were those concerned with security operations, criminal investigations, research and development—all related to lie detection. Several all-day conferences were held with polygraph examiners and research scientists. The subjects of these companies were: (1) Research to improve lie detection * * *. There is a large literature pertinent to lie detection and this was examined extensively.

B. OPINIONS ABOUT LIE DETECTION

Virtually all polygraph examiners believe that lie detection procedures are highly successful, an opinion which has the benefit of substantial repetition.

¹ A complete bibliography appears at the end of the report.