

able performance data to support the view held by polygraph examiners that lie detection is an effective procedure.

2. There can be no doubt that the measurement of physiological responses in the context of a structured interview provides a basis for the detection of deception by objective means. Extensive research by physiologists and psychiatrists shows that humans exhibit many physiological responses in stressful situations; however, such research was not performed to explore its relevance to lie detection. Thus, we do not know at present the increment in effectiveness which the polygraph brings over an interrogation without a polygraph.

3. There is a lack of professional standards for the regulation of lie detection activities throughout the Department of Defense.

4. Many aspects of the technology of lie detection are inadequately developed. Areas which require study are the reliability and validity of lie detection in laboratory and real life situations, the incremental value of new physiological indicators, improvement of the interview procedure, application of automatic data processing to polygraph records, and examination of the possibility that individuals exhibit unique patterns of autonomic response. Recent developments in medical electronics provide more reliable and convenient sensors than those now used in lie detection. * * * The research problems in lie detection are straightforward and there is every reason to believe that a research program would achieve its objectives.

5. There is evidence that training, possibly supported by drugs and hypnosis, can be used to introduce spurious effects into test records. The extent to which such methods could succeed or an examiner could counteract them is unknown.

6. Improvements in the art of lie detection would be useful not only for its present applications to security and criminal interrogations, but for screening foreign personnel and as one means of inspection in an arms control agreement.

RECOMMENDATIONS

1. Establish a program for research and development in the technology of lie detection: This program should include studies on the validity of lie detection, improvement of interview procedures, the development of improved sensors, the effectiveness of adding new physiological indicators to the polygraph and automatic data processing of test records. There is a need to study measures that could be taken to avoid detection on the polygraph and, if they are shown to be effective, to develop suitable countermeasures. The program should also include studies on the effect of cultural and political influences on the value of lie detection, if it were considered as one means of inspection in an arms control agreement.

2. Establish a program to develop professional standards for polygraph interrogation throughout the Department of Defense: This program should consider selection, training, and certification of examiners; methods of supervision; methods of maintaining competence; recordkeeping and performance evaluation; and relation of operating personnel to research and development activities in this area.

AN ASSESSMENT OF LIE DETECTION CAPABILITY

1. PURPOSE OF THIS REPORT

The purpose of this report is to evaluate our ability to detect deception by the objective measurement of physiological responses, a procedure known as lie detection. The Department of Defense and other Government agencies employ lie-detection procedures in certain aspects of their programs and in criminal investigations. Recently, lie detection procedures have been proposed as one means of verifying compliance with the terms of an arms control agreement. Since great reliance has been placed on this method of interrogation, an assessment is in order to determine whether any improvement in the technology of lie detection is required at the present time.

2. INTRODUCTION

It has been long known that the emotional states of human beings are accompanied by observable physiological responses, such as changes in heart rate, breathing, and skin temperature. These physiological mechanisms are largely under the control of the autonomic nervous system although, to a lesser extent, some of them are also under the person's voluntary control by direct or indirect means. The inner psychological state of one person is not directly observable by another but it is possible that the pattern of physiological responses to neutral