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## Contents

- Jan Widacki, *From forensic psychophysiology to forensic neurophysiology. New trends in examinations in the detection of deception* 93
- Magdalena Zagdan, *Polygraph in the Polish Secret Service* 105
- Jerzy Konieczny, *An attempt to falsify the results of a polygraph test through the implementation of false memory: a case study* 117
- Jan Widacki, *Polygraph examination of a serial killer with sexual motives* 123

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## Book review

- Frank Horvath, *Jaworski Ryszard (2006), "Situational sequencing tests in polygraph examination(s)", [Wrocław, Wydawnictwo Uniwersytetu Wrocławskiego, 87 pp.]* 131

- 
- The basic information for Authors 135





Jan Widacki\*

## From forensic psychophysiology to forensic neurophysiology. New trends in examinations in the detection of deception

### 1. Introduction

Developed and perfected for years, polygraph examination techniques have probably reached the limits of their capabilities. Their diagnostic value is comparable to that of other techniques routinely used in investigations (Widacki 1977, Widacki & Horvath 1978). Neither new examination techniques nor new kinds of tests are likely substantially to affect this conclusion. Granted, whereas whether it is possible to improve the diagnostic value by another 1 % and increase the number of conclusive results may be of significance for practice, this remains more an issue of perfecting practice rather than a scientific problem.

Classical detection of deception, recently more often referred to as forensic psychophysiology, has become – just as for example fingerprint identification

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– a routine method, albeit continuously perfected, but no longer presenting a principal research issue for science.

## 2. Remote polygraph examinations

A new situation – undoubtedly due to the threat of terrorism – has triggered significant interest in the possibility of developing a detection of deception technique that would enable the test to be performed remotely without the examinee's knowledge. Therefore, attention has been brought to the physiological correlates of emotions that can be observed and registered remotely, without placing sensors on the examinee's body. Such physiological correlates of emotions are, *inter alia*, changes in facial temperature (discernible with a thermovision camera), emotional changes in the voice, and the pupillary reflex (Hilgard 1972). All of these were taken into consideration separately as diagnostic indicators in the detection of deception.

Undoubtedly, the most extensive literature deals with emotional changes in the voice as an indicator of deception. In general, this indicator and the devices that register it, such as the Psychological Stress Evaluator (PSE) and the Voice Stress Analyzer (VSE), have been tested and as a result deemed useless, since their diagnostic value found experimentally was significantly lower than the diagnostic value of examinations with the traditional polygraph that simultaneously registers changes in breathing, the circulatory system, and the galvanic skin response (Barland 2002, Horvath 2002, Lynch, Henry 2002).

Attention was brought to the possibility of remote observation of another physiological correlate of emotion – changes in facial temperature using a thermovision camera (e.g., Kołdecki 1979) – already over 30 years ago. Yet, no research has in any way standardized these changes or, in particular, attempted to apply them in the detection of deception. The pupillary reflex and eye movement has also been known to be a symptom of emotion for some time (Bender 1933, Woodworth, Schlosberg 1966).

These last three methods have recently attracted attention again in the hope that they could be used for the remote detection of deception, including without the examinee's knowledge (Povildis, Eberhardt, Levine 2002).

Several years ago, in the development of the classical polygraph, three basic correlates of emotion – breathing, cardiac function, and galvanic skin response – were selected from among several known to science based on the relative ease of their registration.

It is highly probable that it is currently possible to select three other indicators of physiological correlates of emotion from among myriad physiological indicators that are also diagnostic, observable, and possible to register remotely; thus, in theory without the examinee's knowledge. It is also theoretically feasible.

At the same time, it would be necessary to construct tests in such a way that fragments of them could be integrated into a dialogue with the examinee such that it is possible to conduct the test while conversing with the examinee in a manner indiscernible to him or her. While a difficult task, it is nevertheless theoretically possible.

Constructing a “remote polygraph” and the technique of administering an examination without the subject's knowledge, or more importantly without the examinee's consent, also has certain ethical and legal ramifications. During a classical polygraph examination, the rule is that the examinee must give consent because without this declared cooperation in the examination, the test becomes technically impossible – for legal and moral reasons as well. Thus, from a legal and ethical standpoint, the “remote” polygraph examination would create a new standard that would also require debate from these perspectives.

### 3. Examination of processes in the brain

A lie, understood as the intentional stating of a falsehood or the conscious concealment of the truth, is a function of thought. A lie combined with the awareness that its detection will bring consequences gives rise to emotions. The classical polygraph examination detected, registered, and interpreted the emotions accompanying the lie, and more precisely the physiological symptoms of emotion (physiological correlates of emotion). Based thereon, it became possible to conclude that a lie or, put more cautiously, an insincerity had occurred.

The examination of the brain and observation of neural processes may aim both at the detection of emotion, as well as the monitoring of thought processes. The involvement of the brain in both thinking and the formation of emotion is obvious.

At the end of the 1920s, Walter Cannon and a few years later Philip Bard developed the thalamus theory of emotion (Cannon 1927, Bard 1934), according to which the arousal of a receptor with a stimulus is conveyed to the thalamus, which plays an activating role. According to this theory, the cerebral cortex only plays a secondary role in the emergence of the emotion, namely, when the stimulus reaches the thalamus, the cortex stops exerting an inhibiting effect over it. According to a competing theory developed over a dozen years later by M. Arnold and D.B. Lindsley, termed the cerebral cortex theory of emotion (Arnold 1950, Lindsley 1951), the cerebral cortex – and not the thalamus – plays the activating role in the appearance of emotion.

At any rate, it is beyond dispute that emotional processes originate in the brain. Emotional states are experienced and expressed in response to events occurring in our surroundings and in ourselves. The brain undoubtedly mediates in the experiencing and expression of responses to the aforementioned events, identifies signals of these events, and triggers emotional processes (Łosiak 2007).

Electroencephalograph (EEG) examinations, involving the registration of the brain's electrical activity, have been conducted since the 1920s. Since the 1940s, EEG examinations have routinely been applied in psychiatric and neurological diagnostics. They have also been used in research on central nervous system activity (e.g., to test the functional connections between the sub-thalamus, thalamus, and the cerebral cortex) (Woodwoth, Schlosberg 1966). It was also noted that changes in an EEG reading could be indicators of emotional changes (Gallhorn 1943, Haogland, et al. 1938), and further that as such they correlate with changes in GSR readings and other indicators of emotional changes (Lindley 1951). Obermann (Obermann 1939) made successful use of EEG readings in the experimental detection of deception. In the 1970s, numerous authors, among others Orne and co-researchers (Orne, et al. 1972), wrote on the application of the EEG in the detection of deception.

M. Dufek and co-researchers (Dufek, Richter 1972; Dufek 1970) used the EEG reading, along with GSR readings, pneumograph and pulse-rate readings,



and blood pressure fluctuations in the experimental detection of deception. Gulajew and Bychovskij (Gulajew, Bychovskij 1972) also applied the 15-channel electroencephalograph "Alvar-2" in the experimental detection of deception by conducting the test with the chart. Detailed descriptions of Dufek's or Gulajew and Bychovskij's experiments, however, do not exist. The literature points out that EEG exams probably may have greater importance for the analysis of the origin of emotion and its physiological correlates than just for ascertaining that emotion occurs (Widacki 1981). Finding the existence of emotional changes and the record of physiological correlates of emotion can be done in a much less complicated manner.

The discovery of nuclear magnetic resonance (MNR) by F. Bloch and E. M. Purcel (Nobel Prize in physics 1952), the possibility of magnetic resonance imaging (MRI), and finally since the 1980s their medical application in examining living humans (Nobel Prize in medicine for P.C. Lauterbur and P. Mansfield in 2003) enabled the monitoring of brain activity at a previously unknown scale.



fig. 1: Apparatus for MRI Edge Eclipse 1, 5 T (1999)

Apart from medical diagnostics, MRI can be used to examine the brain itself and its functioning. This gave rise to hope that not only would it be possible to locate the part of the brain responsible for moral choices (Green 2003, Green et al. 2001, Green et al. 2004), but that it would even be possible to attempt mind-reading (Haynes, Rees 2006). Attempts have also been made to use this method in the detection of deception. In experimental research, Hira (Hira 1998) achieved slightly better results with this method than by using the classical polygraph.

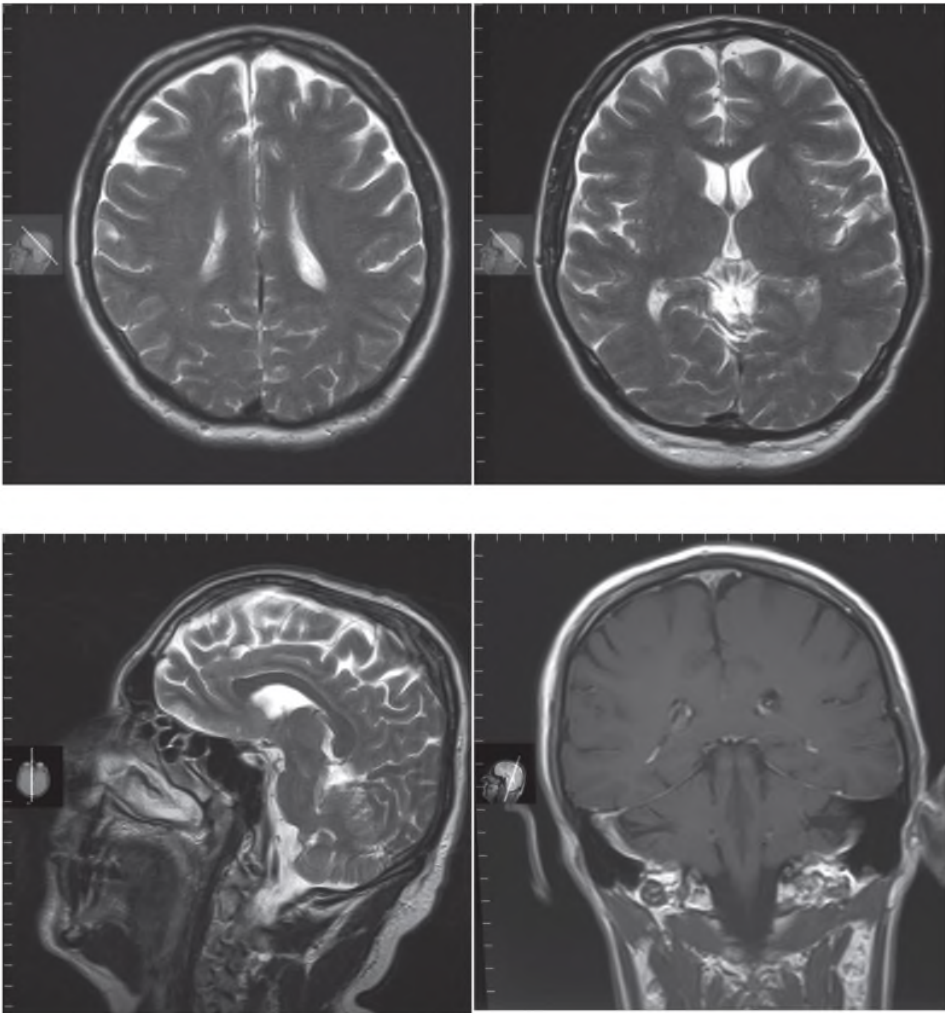


fig. 2: Pictures of human brain by MRI

Other experimental research has also yielded promising results. Loughead and co-researchers (Loughead et al. 2004), after conducting an experiment involving the tracking of brain activity in 18 volunteers examined using the Guilty Knowledge Test (GKT), found that telling a lie and telling the truth required different brain activity. In giving untrue responses, brain activity increased in regions associated with inhibition and control. The authors concluded that using the fMRI is a more exact method of examining brain activity and is superior to previously used methods of detecting deception, that is, to classical polygraph examinations.

Other authors, having conducted similar experimental research on a group of 10 volunteers, reached identical conclusions (Kozel, et. al. 2004, Kozel, et. al. 2004a). The conclusion from another experiment on a group of 11 volunteers (Mohamed, et, al. 2006) was that the method is more effective than classical polygraph examination because the specific areas of the brain associated with telling the truth or telling a lie are identifiable using the fMRI. Other researchers investigating the application of fMRI in the detection of deception have also obtained interesting results (J.M.C. Vendemia 2001, 2001 a, 2002; Langleben et al. 2002, 2005, 2006; Wolpe et al. 2005, Lee et al. 2002).

Whereas all of the experiments were conducted on small groups (from 10 to 18 persons), all appear to confirm the assumption that detection of deception using brain observation with the fMRI method can produce more certain results than those obtained in classical polygraph examinations. At any rate, such research will certainly deepen knowledge of the mechanisms of emotion and enrich theoretical knowledge upon which to base the detection of deception.

Thus, the possibility of increasingly thorough penetration of brain processes enables the increasingly deeper delving into the private sphere of humans, which, as Happel (Happel 2005) noted, gives rise to new ethical and legal problems. What is more, it may entail consequences for our entire civilization.

## References

- Arnold M.B. (1950): *An excitatory theory of emotion*, New York.
- Bard P. (1934): *The neuro-humoral basis of emotional reaction*, [in:] *Handbook of General Experimental Psychology*, Murchison Warcester.
- Barland G. (2002): *Use of voice changes in the detection of deception*, *Polygraph*, 2002, 31,2.
- Bender W.R. (1933): *The effect of pain and emotional stimuli and alcohol on papillary reflex activity*, *Psychol. Monogr.* 1933, 198, 268.
- Cannon W. (1927): *The James-Lange theory of emotion*, *Amer. Journal of Psychology*, 1927, 39.
- Dufek M. (1970): *K problematice polygrafického vyšetřování v kryminalistice [in:] Doplnkové studijní materiály pro kryminalistický směr právnického studia*, Universita Karlova, Praha.
- Dufek M., Richter L. (1972): *Soudne psychologické praktikum*, Universita Karlova, Praha.
- Farwell L.A., Donchin E. (1986): *The "Brain Detector" P-300*, (paper presented at the 26<sup>th</sup> Annual Meeting of Psychophysiological Research, October 1986).
- Farwell L.A. (1993): *Brain responses in detection: a new paradigm*, (paper presented at the 33<sup>rd</sup> Annual Workshop on Practical Polygraph, 1993).
- Gallhorn E. (1943): *Autonomic regulation: their significance for physiology, psychology and neuropsychiatry*, New York.
- Green J.D. (2003): *From neural "is" to moral "ought": what are the moral implications of neuroscientific moral psychology*, *Nature Reviews Neuroscience*, 2003, 4.
- Green J.D., Nystrom L.E., Engell A.D., Darley J.M., Cohen J.D. (2004): *The neural bases of cognitive conflict and control in moral judgement*, *Neuron* 2004, 44, 847-850.

Guliajev P.J., Bychovskij J.E. (1972): *Issliedovaniye emotsionalnogo sostajania chielovieka v processie proizvodstva sledstviennogo dejstvija*, Kriminalistika i Sudiebnaja Ekspertiza, 1972, 9, 108.

Haogland I.L. (1938): *Emotion in men as tested by the delta index of the EEG*, Journal of Genetic Psych., 1938, 19.

Happel M.D. (2005): *Neuroscience and detection of deception*, Review of Policy Research, 2005, 22, 5, 667- 670.

Haynes J.D., Rees G. (2006): *Decoding mental states from brain activity in humans*, Nature Reviews Neuroscience, 2006, 7(6), 523-526.

Hilgard E.R. (1972): *Wprowadzenie do psychologii*, Warszawa.

Hira S. (1998): *Detection of deception with event-related brain potentials*, Japanese Journal of Science and Technology for Identification, 1998, 3, 2.

Horvath F. (2002): *Experimental comparison of the psychological stress evaluator and the galvanic skin response in detection of deception*, Polygraph, 2002, 31, 2.

Kołecki H. (1979): *Kryminalistyczne zastosowania termografii*, Warszawa.

Kozel F.A., Johnson R.H., Padgett, George M.S. (2004): *A replication study of the neural correlates of deception*, Behavioral Neuroscience, 2004, 118, 4.

Kozel F.A., Revel L.J., Lorenbaum J.R., Shastri A., Elhai J.D., Horner M.D., Smith A., Nahas Z., Bohning D.E., George M.S. (2004 a): *A pilot study of functional Magnetic Resonance Imaging brain correlates of deception in healthy young men*, Journal of Neuropsych. Clin. Neurosci. 2004, 16, 295-305.

Langleben D.D., Schroeder L., Maldjin J.A., Gur R.C., McDonald S., Ragland J.D., O'Brien C.P., Childress A.R. (2002): *Brain activity during simulated deception: an event related functional magnetic resonance study*, Neuroimage, 2002, 15 (3) 727-732.

Langleben D.D., Loughhead J.W., Bilker W.B., Ruparel, Childress A.R., Busch S.I., Gur R.C. (2006): *Telling truth from lie in individual subjects with fast event-related fMRI*, Human Brain Mapp. 2005, 26(4), 262-272.

- Langleben D.D., Dattilio F.M., Gutheil T.G. (2006): *True lies: delusions and lie-detection technology*, *The Journal of Psychiatry and Law*, 2006, 34(3), 351-370.
- Lee T.M.C., Ho-Ling Lin, Li-Hai Tan, Chan C.C.H., Mahanakali S., Ching-Mei Feng, Jinwen Hon, Fox P.T., Jia-Hong Gao (2002): *Lie detection by functional Magnetic Resonance*, *Human Brain Mapping*, 2002, 15(3) 157-164.
- Lindsley D.B. (1951: *Emotion*, [in:] S.S. Stevens (ed.), *Handbook of Experimental Psychology*, New York.
- Lynch B., Henry D. (2002): *Validity study of the psychological stress evaluator*, *Polygraph*, 2002, 31, 2.
- Łosiak W. (2007) *Psychologia emocji*, Warszawa.
- Mohamed F.B., Faro S.H., Gordon N.J., Platek S.M., Ahmed H., Williams J.M. (2006): *Brain mapping of deception and truth telling about an ecologically valid situation: functional MRI and polygraph investigation – initial experience*, *Radiology*, 2006, 238, 679-688.
- Obermann C.E. (1939): *The effect on the berger rhythm of mild affective states*, *Journal of Abnormal and Social Psychology*, 1939, 34, 84-85.
- Orne M.T., Thackray R.J., Paskewitz D.A. (1972): *On the detection of deception – a model for the study of the psychophysiological effects of psychological stimuli*, [in:] *Handbook of Psychophysiology*, N.S.Greenfield, R.A. Sternbach (eds.), Rinehart and Winston Inc.
- Povildis I., Eberhardt N.L., Levine J.A. (2002) *Seeing through the face of deception*, *Nature*, 2002, 415, 35.
- Vendemia J.M.C. (1999): *Neural mechanisms of deception and response congruity to general knowledge information and autobiographical information in visual two-stimulus paradigms with motor response*, Dep. of Defense Polygraph Institute: DoD PI 99-P-0010.
- Vendemia J.M.C., Buzan R.F. (2001): *Brain measurements during deception*, (paper presented at the Annual Meeting of the APA, Indianapolis, July 2001).

Vendemia J.M.C., Buzan R.F. (2002): *Deception and response congruity in visual two-stimulus paradigms involving motor response*, International Journal of Psychophysiology, 2002, 45, 28-29.

Widacki J. (1977): *Wartość diagnostyczna badania poligraficznego i jej znaczenie kryminalistyczne*, Kraków.

Widacki J. (1981): *Wprowadzenie do problematyki badań poligraficznych*, Warszawa.

Widacki J., Horvath F. (1978): *An experimental investigation of the relative validity and utility of the polygraph technique and three other common methods of criminal identification*, Journal of Forensic Sciences, 1978, 23, 3, 596-601.

Wolpe P.R., Forster K.R., Langleben D.D. (2005): *Emerging neurotechnologies for lie-detection: promises and perils*, American Journal of Bioethics, 2005, 5(2) 39-49.

Woodworth R.S., Schlosberg H. (1966): *Psychologia eksperymentalna*, Warszawa.







Magdalena Zagdan\*

## Polygraph in the Polish Secret Service

Polygraph screening has proved its highest utility for the United States Secret Service, which has used the polygraph to a very significant extent. The existence of the Department of Defense Polygraph Institute (DoDPI) – a separate unit dealing only with polygraph testing – serves as evidence of this fact. This Institute prepares an annual report of its activity to the US Congress (Matte, 1998).

According to available information, 1951 was the beginning of polygraph testing in Poland, yet this fact was revealed only in the 1960s. The 1970s brought significant scientific achievements in the field of polygraph examinations; the books of Jan Widacki (Widacki, 1977b, Widacki, 1981a, Widacki, 1982c) were a breakthrough, as was *Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Methods of Criminal Identification* (Widacki, Horvath 1978d), which he wrote with Frank Horvath.

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An increased use of the polygraph in Poland was evident after 1990, when the basic elements of democracy rose from scratch in the post-communist reality. A specific example for the effort that was made, apart from the experience already gained, were the uses of the polygraph in recruiting police officers in the United States (Matte, 1998).

Nowadays, polygraph screening has many applications. Polish law allows polygraph testing in trials as an expert opinion. Practice has shown that the need for polygraph testing in Poland is large and gradually increasing.

Military units have nearly forty years of experience in the field of polygraph examinations. In 1957, a military counter-intelligence institute was established – the Military Internal Service (WSW) – which was subordinate to the Ministry of National Defence and replaced the Main Directorate of Information of the Polish Army (GZI). In 1969, WSW leaders organized a preliminary course for candidates to be experts in the field of psychophysiological testing. The leader of this course was a prominent specialist (who had also had been published in the American journal “Polygraph”) – Dr. Aleksander Krzyścin, who at the time had fifteen years experience in polygraph work. Between 1969 and 1989, military experts examined 4626 people in 943 cases.

## Military Information Services

The military units of the People’s Republic of Poland’s intelligence and counter-intelligence services were disbanded by order of the Minister of National Defence in April 1990. Also in this year, the Military Internal Service was combined with the Second Directorate of the General Staff on the Polish Army (military intelligence). Thus, the Military Police and the Second Directorate for Intelligence and Counter-intelligence was established. In 1991, the Second Directorate for Intelligence and Counter-intelligence was transformed into the Military Information Services (WSI).

The Military Information Services Act of July 2003 established the requirements for accepting a candidate into service with the MIS. According to this act, applicants must be regular soldiers in active military service, either permanent or temporary. Further, as an element of the qualification process

polygraph testing was conducted on soldier candidates for positions that required specific qualifications or pre-dispositions. Polygraph examinations were considered to be helpful in assessing psychological suitability to serve in the MIS. Moreover, the act broadened this procedure to include soldiers already working in the Military Information Services but who wanted to be transferred to such a position. The Head of the Services made the decision in such cases. Thus, a situation wherein a soldier applying for a position requiring specific qualifications would not undergo a polygraph examination could have been possible as a consequence of a lack of such a decision.

In June 2004, the Minister of National Defence issued an executive regulation reiterating the paragraph concerning the conducting of psychophysiological testing as an element of qualification procedure. A personal questionnaire that candidates were supposed to complete was attached as an annex to this executive regulation. Section IV of this regulation contained the following questions: (1) Have you ever undergone a psycho-physiological examination? If yes, please indicate when and for what purpose? and (2) Do you consent to undergo a psycho-physiological examination? Pursuant to the executive regulation, the qualification process is halted in the event of a negative result of the examination or a refusal to undergo testing by methods set out in the regulation. This approach shows the importance attached to polygraph examination and the potential information that could be gathered as a result. Without an examination, the decision would be not to employ the candidate, which seemed a reasonable method, particularly because a person in a position requiring specific qualifications would undergo a polygraph examination several times during their employment. Thus, it should not be permitted that candidates refuse to undergo a polygraph examination at the very beginning of the qualification process.

## The Military Counterintelligence and Intelligence Services

The Military Information Service was disbanded in 2006 and on 1 October 2006 the Military Counterintelligence and Intelligence Services were established (SKW and SWW). Article 5 of the law establishing these serves addresses the issue of polygraph examinations. It concerns the qualification process and assumes that for candidates applying for a position requiring specific qualifications, the process would be broadened to include procedures to verify the candidate's suitability for such a position; one such procedure

would be polygraph screening. This particular provision – when compared to its equivalent in the Military Information Service Act – exhibits one major difference. The Military Counterintelligence and Intelligence Services Act uses the expression “the qualification process can be expanded to include procedures (...) including psycho-physiologic testing.” Thus, the application of polygraph examination is not compulsory in the qualification process, but should be applied as the particular case warrants. Enabling legislation implements regulations related to the procedure. Article 9 on the qualification process for employment in the Military Counterintelligence Service provides for the possibility of conducting psycho-physiological testing on a candidate based on a decision of the head of the Service. The candidate must answer two questions: (1) Have you ever undergone a psycho-physiological examination? If yes, please indicate when and for what purpose. (2) Do you consent to undergo a psycho-physiological examination? The regulation contains a provision according to which whenever a candidate does not consent to undergo an examination, the qualification process is discontinued. The same consequence occurs in the event of a negative result of any element of the procedure. With respect to polygraph testing, a negative outcome means that the examinee has been not honest in his/her responses or has attempted to conceal some information. Thus, the proper action in such cases is to halt the procedure. Due to the fact that this law concerns both the Military Counterintelligence and the Military Intelligence Services, the executive regulation on Military Intelligence contains the same provisions as the regulation on the Military Counterintelligence Service.

## The Military Gendarmerie

After the disbanding of the People’s Republic of Poland’s military intelligence and counterintelligence services, police functions were taken over by the Military Gendarmerie headquartered in Warsaw, as provided in the executive ordinance of the Minister of National Defence in 1990 (in this manner the pre-war tradition of the Gendarmerie in the Polish Army was reactivated since formally the gendarmerie was disbanded in 1949 by the Polish Military Forces in the West).

In the legislative act on the Military Gendarmerie of August 2001, which is still in force, the issue of psycho-physiological testing is regulated as a possible element in the qualification process for the Military Gendarmerie.

The act refers to the executive ordinance of the Minister of National Defence, which stipulates the precise requirements for candidates for employment with the military. The recruitment procedure to the Gendarmerie entails a qualification process that is regulated under the decision of the Minister of National Defence of November 2002. To begin the qualification process, a candidate must submit an application to the Commander of the Military Gendarmerie and complete the qualification form. In the second stage, an “examination and polygraph testing” are expected. The Provincial Recruitment Boards, however, conduct the qualification of the candidates to work in the Military Gendarmerie.

The criteria that candidates for work in the Military Gendarmerie should meet were expressed in the Minister of National Defence’s executive ordinance of December 2001 concerning the additional physical and psychological conditions of Military Gendarmerie employees. Article 1 sets out the expectation that successful candidates must achieve positive results on psychological tests.

As a separate group of candidates, the regulation considers those applying for regular service. The criteria that candidates for regular service in the Military Gendarmerie should meet were also expressed in the Minister of National Defence’s executive ordinance of December 2001 concerning the additional physical and psychological conditions of the regular soldiers in the Military Gendarmerie. This regulation foresees, among others, the achievement of positive results on psycho-physiological tests. An identical approach is applied towards soldiers who are not in regular service.

In both the act and the executive ordinance, no issue is raised about the discontinuation of the qualification process in the event of a candidate’s refusal to undergo psycho-physiological testing, which is a noticeable difference in the regulation. The executive ordinance stipulates the positive outcome on qualification tests as a condition for employment. Taking this into consideration, the potential candidate will not be accepted if the result of the polygraph screening is negative. The question then is what happens if a candidate refuses to undergo testing; would that be regarded as a negative result? Can a candidate be accepted for employment if he/she has refused to undergo an undoubtedly significant element of the qualification procedure?

## State Protection Office

In 1990, after the Security Service was liquidated, the State Protection Office was established. The institution existed up to June 2002, and together with the Military Information Service, was a part of the Polish Secret Service.

The Act on the State Protection Office contained a regulation referring to “physical and psychological” abilities as pre-conditions for service in the “military formations subject to specific discipline”. These abilities were verified by certain medical boards subordinate to the head of the Office. The statute dealt with the qualification process of the candidate and assumed the possibility of conducting “psycho-physiological” testing. As a condition for employment, the need arose to check if the candidate had the special qualifications demanded for the position. The act defers to executive ordinances specifying the qualification process. Although the Minister of National Defence’s executive ordinance of 1990 did not use the phrase “psycho-physiological testing,” it was implied that it could be applied if the position for which the candidate was applying required “special pre-dispositions”. The State Protection Office Act was repealed in 2002.

## Internal Security Agency and Intelligence Agency

After the State Protection Office was disbanded in May 2002, two separate agencies were established: the Internal Security Agency and the Intelligence Agency.

The Internal Security Agency and Intelligence Agency Act raises the matter of expanding the qualification process of “psycho-physiological testing” whenever the candidate applies for a post that requires special pre-dispositions. An executive ordinance of 2002 to which the act refers enumerates psycho-physiological testing as one of the stages of the qualification process for the Internal Security Agency. An identical provision is found in the executive regulation of 2003 concerning the precise methods of conducting the qualification process for service in the Intelligence Agency.

It is worth mentioning the fact that the personal questionnaires constituting appendices to the executive ordinances on the Internal Security Agency

and the Intelligence Agency do not contain any provision under which the candidate is supposed to give (or not) consent for polygraph testing. The consequence of a candidate's refusal to take part in the proceedings at any stage of the qualification process is its discontinuation. Nevertheless, in the case of polygraph testing, the candidate's consent or lack thereof it is not enclosed in the questionnaire.

Another issue concerns an article of the Internal Security Agency and Intelligence Agency Act based upon which an officer of the agency can be screened on a polygraph. The decision on referral for testing lies with the agency head. In the author's opinion, due to the fact that psycho-physiological testing is conducted when considering employment of a candidate for a position requiring special abilities, the article in question should be clarified by adding a statement that only a person in such a position or one applying for such a position can be referred for polygraph screening.

## The Central Anticorruption Bureau

The CBA was established by the Central Anticorruption Bureau Act of June 2006 as a special service to combat corruption in the public and private sectors, especially in state and local government institutions, as well as to fight any activity that endangers national economic interests.

The Central Anticorruption Bureau Act is the newest piece of legislation discussed in this article. It uses the phrase "polygraph screening" for the qualification process for a position requiring special abilities. At the same time, the act states that this part of the qualification process can be omitted when the candidate is an officer or a former officer of the Internal Security Agency, Intelligence Agency, the Border Guard, or the Police. An executive ordinance from July 2006 concerning the precise methods of conducting the qualification process provides for the possibility of screening the candidate on a polygraph if the position demands special qualifications. Additionally, the regulation stipulates that refusal to undergo verification or a negative outcome at any stage result in the automatic discontinuing of the procedure. This provision, however, does not refer to the polygraph testing. This approach differs completely from all other approaches described in this article (it can be only compared to the approach found in



the Military Gendarmerie Act, which does not mention the discontinuation of the qualification process at all). Consequently, the negative outcome of the candidate's polygraph examination indicating an absence of abilities required to work in the position in question does not discontinue the qualification process. Clearly, the lawmakers have made a mistake that needs to be rectified.

## The Border Guard

The Border Guard was established by a regulation in 1990 at the time of the disbanding of the military formation of the Border Defence Army. This is a Polish state security agency entrusted with patrolling national borders. At present, polygraph screening is widely used among most of the Border Guard, probably due to the fact that it is one of the most modern military units in Poland.

The regulation requires polygraph testing during the application process for any position in the Border Guard. The qualification process consists of two phases, the first stage of which is psycho-physiological testing. The regulation provides for the conducting of "psychological tests verifying the candidate's intellectual and personal pre-dispositions". No polygraph procedure is involved in the second stage. The most recent amendment to this regulation (in 2006) does not alter anything.

Recently, the author contacted the press spokesmen for the Military Gendarmerie, the Internal Security Agency, and the Intelligence Agency to obtain further information concerning the legal acts and regulations mentioned in this article. The author asked respondents to comment upon any controversial aspects of the regulations concerning each of agencies.

To the author's surprise, only one press spokesman, from the Military Gendarmerie, took my request seriously and replied me in details. He explained that, according to the best of his knowledge, no such instance had occurred in which a candidate for employment had refused to undergo a psycho-physiological test. On the other hand, he admitted that the Military Gendarmerie does not have any statistics concerning polygraph examinations on the whole. Instead, they only register the fact of conducting such an examination. This is mainly based on the presumption that hardly anyone



would be interested in details such as the number of examinations conducted or other about polygraph practices of the Military Gendarmerie.

No other replies to the author's queries were received; thus, no further conclusions can be reached. The press spokesman of the Internal Security Agency, however, assured the author that a reply would soon be sent by email. At the time of this writing, however, the author is still awaiting a reply.

## Conclusion

The main objective of this study was to present the current legal status of polygraph testing in the Polish Secret Service. Unfortunately, the image of the Polish Secret Service is far from coherent. There is a deficiency of cohesion between the regulation of certain branches in the aspects of, for instance, testing officers or soldiers in active service. This has been well-defined in only one regulation – for the Military Information Service – which is not in force. It cannot be assumed that polygraph testing is not an applied method. It is well-known that polygraph testing can be used by all units of the secret service as a legal framework of operating procedures. None of the acts specifically mentions the possibility, although this can be concluded from from such phrases as: “verifying the reliability of obtained information”. In light of the foregoing, the use of polygraph screening cannot be excluded in the testing of those under suspicion, but not only. It can be surmised that the use of polygraph testing in cases such as those in private industry, where for example employee loyalty is checked. Moreover, “verifying of the reliability of obtained information” involves the polygraph screening of persons who are sources of information. Thus, it can be assumed that the polygraph is being used in the progress of detecting “humint”.

The Polish Secret Service does not publish any reports concerning polygraph testing and for this reason no statistical knowledge is available about the annual number of polygraph examinations conducted – neither about the methods and the kinds of tests used most often, nor about the cases in which it has been used most widely. We also do not know how many candidates applying for positions requiring special qualification and undergoing polygraph screening failed to pass. It is believed that polygraph testing is used on the widest scale in the Border Guard and that is the only piece of information that approximately defines the usage of polygraph in the Polish Secret Service.

We may one day have in Poland a situation in which polygraph testing is recognized in society as well as in the government as an undoubtedly reliable and necessary method. Then, as is the case in the United States, annual reports will be published for the government or special committees on the scale and usage of the polygraph. Only time will tell.

## References

Matte, J. A. (1998), *Forensic psychophysiology using the polygraph*, Williamsville, J.A.M. Publications.

Widacki, J. (1981), *Wprowadzenie do problematyki badań poligraficznych [Introduction to the polygraph examination]*, Warszawa, Departament Szkolenia i Doskonalenia Zawodowego MSW.

Widacki, J. (1977), *Wartość diagnostyczna badania poligraficznego i jej znaczenie kryminalistyczne [The diagnostic validity of polygraph testing and its forensic significance]*, Kraków, Wydawnictwo Uniwersytetu Jagiellońskiego.

Widacki, J. (1982), *Analiza przesłanek diagnozowania w badaniach poligraficznych [The analysis of diagnostic Premises in polygraph examinations]*, Katowice, Wydawnictwo Uniwersytetu Śląskiego.

Widacki, J., Horvath, F. (1978), *Experimental investigation of the relative validity and utility of the polygraph technique and three other methods of criminal identification*. *Journal of Forensic Sciences*, 1978, 23, 3, 596–601.







Jerzy Konieczny\*

## An attempt to falsify the results of a polygraph test through the implementation of false memory: a case study

### Case description

The remains of a level crossing attendant that had been working alone at night were found in the crossing service building at the intersection a railroad right-of-way and a highway.. The post-mortem and the investigation of the scene indicated that the woman suffered several knife wounds. It was also established that the perpetrator fled the scene after having destroyed the crossing's telephone and disabling the signal lamp located in front of the building.

Initially, the investigation that followed brought no results. A few months after the incident, however, John L., the officer in charge of the case filed a petition to have Joseph S., arrested some months earlier on theft charges, undergo a polygraph test. The officer presented evidence pointing to the

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possibility that the suspect may have killed the crossing attendant and then committed the theft with which he had been charged some time later. The supervisors at the police unit approved the petition and the examination was conducted (by the author of this article). It should be mentioned that the officers at this particular police unit were very well trained in the application of polygraph examinations.

When he was brought to the polygraph examination room, Joseph S. turned out to be a single male aged 27, with a primary school education, and of intelligence certainly falling within the norm, although likely in the bottom ranges of the norm. His personality indicated that in everyday situations he might be likely to act with significant naiveté. The examiner maintained good rapport with the subject and the pre-test interview made it perfectly clear that the subject understood the purpose of the test, accepted the questions that were read to him, and accepted the request to undergo a polygraph examination, as he confirmed by signing the appropriate release. The suspect emphasised that he had not committed manslaughter and that he had not heard of the crossing attendant's killing.

The examination was conducted using the Reid technique. It included a stimulation test and three control question tests, followed by three POT-type tests, where the relevant questions concerned the murder weapon (knife), the destroyed telephone, and the broken signal lamp.

The interpretation of the Reid tests pointed unequivocally towards an NDI diagnosis. Paradoxically, the responses to the relevant questions in all three POT tests clearly suggested that the subject knew the details of the event, although he had denied it in the pre-test interview. This information was included in the examination report, with comments indicating that the case was highly atypical and needed explaining.

The chief of the police unit conducting the investigation into the murder of the attendant ordered a thorough inspection of the suspect's place of work. Eventually the inspection revealed that the officer, frustrated by the lack of satisfactory results, decided to bring charges against a random person and to furnish evidence upon which such suspicions might be founded. He chose the arrested Joseph S. as target of his manipulation.

An agent working for John L. was placed in the multiple occupancy cell in which Joseph S. was being held. The agent quickly became „friends“ with

Joseph S. and then repeatedly told him an invented story, the key elements of which were: several knife blows, destruction of a telephone and disabling of a signal lamp. While the main story line was in no way connected with the killing of the crossing attendant, this story must have impressed itself deeply in the suspect's mind.

As previously mentioned, the officer in charge had received thorough training in working with polygraph operators. He knew the methods of preparing and conducting the examinations and had previously used such tests on a number of occasions. During a consultation with the polygraph examiner before the examination of the suspect, the officer in charge himself had suggested that the use of a knife, destruction of a telephone and the breaking of a signal lamp might be used in POT tests. The examiner accepted these ideas and incorporated them into the test. When the attempt to falsify the examination results was revealed, the officer in charge was expelled from the police force.

## Discussion

First of all, it needs to be considered whether John S. did in fact have a false memory. If we accept, following Rosenfeld (2003), that „false memory refers to honestly believed recall of events which did not happen“, then the answer is negative, since Joseph S. neither „honestly believed“ nor „honestly recalled“ anything that he could consciously connect with the attendant's killing. When he said in the pre-test interview that he had never heard of such a killing, he was telling the truth.

The case of Joseph S. confirms the observations of Kassin and Kiechel (1996), who wrote that „...memory can be altered not only for observed events and remote past experiences, but also for one's own recent actions“. It should be noted that this alteration may be influenced by a third party, including with ill intent. Even Kassin and Kiechel's observation, however, does not justify the claim that Joseph S. had been implanted with false memories, at least not in the strict sense of the term. Therefore, it is better in this case to refer to „false memory“. The final evaluation of the type of manipulation performed on Joseph S. must be left to psychologists. For the purposes of the present text, it is crucial to consider the relevance of the foregoing case for the practice of polygraph examinations.

Most importantly, the case of Joseph S. demonstrates once again that the responses to relevant questions in a POT test are unspecific insofar as the source of the subject's knowledge is concerned. In other words, the subject's responses are analogous whether the subject participated in the crime, learned of the event at a later time, or whether – as may be learned from the case of Joseph S. – the „knowledge“ of the event had been generated in the subject's mind through a mechanism similar to that which produces false memory. The point in time in which the source of knowledge becomes irrelevant is the moment when the subject makes the decision during the pre-test interview to hide information from the examiner. Furthermore, methods of interpreting results offer no possibility to differentiate between responses depending on the source of the subject's knowledge. The case of Joseph S. confirms and expands the conclusions presented in Konieczny, Frąś, and Widacki (1984).

The case may also be a contribution to more general considerations on truth, lies and the role of polygraph examinations in the study thereof. In their comprehensive discussion of the subject matter, Gordon and Fleischer (2006) suggest that „...untruth – a lie – is: (...) the presentation or omission of information, with the deliberate intent to deceive and mislead someone who is requesting the truth.“ Joseph S. had no intention to deceive or mislead. Nonetheless, his responses in the POT tests indicated that he was lying. When, then, is the polygraph really a lie detector, a fact finder, or something else entirely?

## References

Gordon, N. J., Fleischer, W. L. (2006), *Effective Interviewing and Interrogation Techniques*, Academic Press.

Kassin, S. M., Kiechel, K. L. (1996), *The Social Psychology of False Confessions: Compliance, Internalization, and Confabulation*, *Psychological Science* vol. 7, nr. 3.

Konieczny, J., Frąś, M., Widacki, J. (1984), *Pochodzenie ukrytej informacji a niektóre cechy osobowości w badaniu poligraficznym*, [*The Specificity of So-called Emotional Traces and Certain Features of Personality in Polygraph Examination*], *Archiwum Medycyny Sądowej i Kryminologii*, vol. 34, nr 1.



Rosenfeld, J. P. (2003), *Event-related Potentials in the Detection of Deception, Malingering, and False Memories*, in: Kleiner, M. (ed.), *Handbook of Polygraph Testing*, Academic Press.





Jan Widacki\*

## Polygraph examination of a serial killer with sexual motives

It is assumed that murderers with sexual motives are generally good subjects of polygraph examinations (Abrams 1989). According to current knowledge on such murders and their perpetrators (Halzelwood R., Douglas J.E. 1980, Douglas J.E., Ressler K.E., Burgess A.W., Hartman C.R. 1986), these killers typically exhibit personality disorders, whereas murderers categorized as “organized” typically exhibit a dissocial (antisocial, asocial) personality previously termed “psychopathic” (in the DSM-IV-TR classification: 301.7 and in the ICD-10 classification F.60.2). On the other hand, killers classified as “disorganized” as a rule exhibit a schizoid personality (in the DSM-IV-TR classification: 301.20 and in the ICD-10 classification F.60.1).

Thus, since we know that psychopaths are generally good subjects for polygraph examinations (Barland G.H., Ruskin D.C., 1974, Krsnich D.A., 1997), theoretically organized murderers should clearly be good polygraph examination subjects. Little, however, is known about the capacities of

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persons with a schizoid personality – the “disorganized murderers.” Since it is known that schizophrenics as a rule are unsuitable for polygraph examinations (Abrams S., 1974), it is suspected that persons with schizoid personality disorders may pose difficulties for polygraph examinations.

Joachim Knychala was a serial sexual killer. Ultimately, he was sentenced for committing five murders and seven attempted murders. According to contemporary criteria, he would undoubtedly be classified as an “organized murderer” (Widacki J., 2006). Psychological examinations confirmed his high intelligence (IQ 125) and an abnormal (psychopathic) personality with sadistic characteristics.

The polygraph examinations to which he was subjected (a total of three times!) confirmed that, consistent with his exhibited personality traits, he was a good subject for such examinations. The murderer, when examined for the first time as a suspect in a single murder unrelated to the others, but which was in fact the last of the series, reacted very strongly to relevant questions and essentially did not react to control questions.

The examination was carried out using the Reid technique, by conducting five tests: RCQT, number test, RCQT II, MQT, and RCQT – as a Silent Answer Test. No POT tests were conducted, since the examinee knew all the details of the event and was in the victim’s presence the entire time, a fact which he did not contradict.

In the control question tests, the following questions were relevant: “Did you hit Bogusia in the head?” (question 3), “Did you kill Bogusia?” (question 5), “Did you intend to make a pass at Bogusia?” (question 8), and “Did you lie when you said that Bogusia fell by herself?” (question 9).

The control questions included: “Have you ever in the past wanted to engage in perverse sexual intercourse?” (question 6) and “Did you commit any crime before 1971 about which the police does not know?”

As mentioned, no one during the examination suspected that the subject was the wanted serial sexual murderer. In the pre-test interview, the subject said that in 1971 he had been falsely accused of participating in a rape.

The magnitude of the reaction was scored using the numerical method.

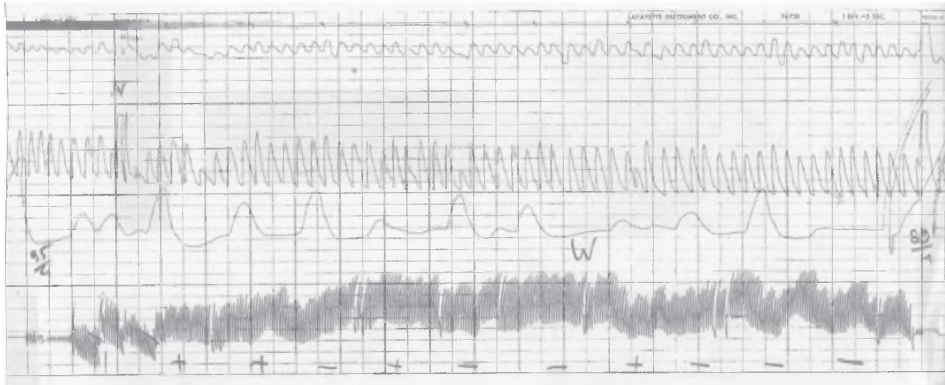


Fig. 1. Registration of the RCQT test

As is evident, the subject clearly reacted to relevant questions and did not react to control questions. The most distinct reactions occurred on the GSR reading and the cardiovascular reading. The expert calculated the total value of the reactions at 10 points.

After the number test, the RCQT test was repeated.

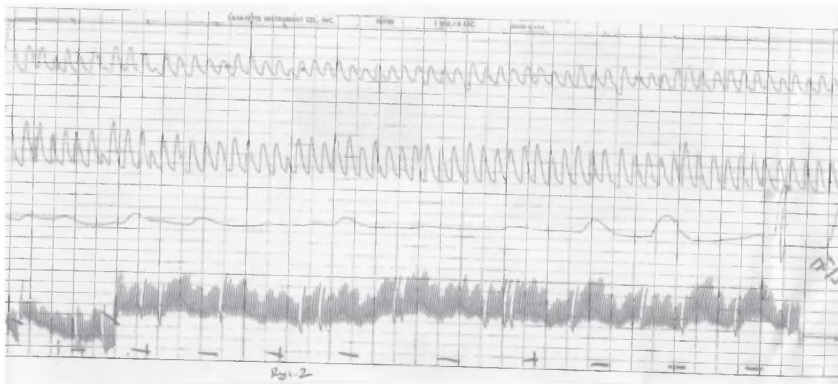


Fig. 2. Registration of the RCQT II test

As is shown, the reactions to the questions in this test were even greater than in the first; the expert scored these reactions at a total of 18 points.

These reactions occurred again in the MQT and SAT tests.



Fig. 3. Registration of the MQT

It may seem strange that a subject with such a past (of which the expert was not aware) did not react to control question 6 (“Have you ever in the past wanted to engage in perverse sexual intercourse?”). Perhaps this can be explained by the functioning of the psychopathic personality in a stressful situation.

For some researchers (Lykken D.T. 1957), one of the main features of psychopathy is the deficit of anxiety. This deficit usually applies to distant events (e.g., future consequences of present actions) and not to situations of immediate threat. The subject was undoubtedly concentrating on the examination of one concrete murder about which he was asked. Past events, distant both in time and in subject matter to the examinee were not significant to him. For this reason, the subject did not react when asked about them in the control questions.

## References

Abrams S. (1989): *The complete polygraph handbook*, Lexington Books, D.C. Health and Comp., Lexington, Mass., Toronto, 167-169.

Abrams S. (1974): *The validity of the polygraph with schizophrenics*, Polygraph 3 (3), 328-337.

Barland G. H., Raskin D. C. (1974): *Psychopathy and detection of deception in criminal suspects*, Utah Polygraph Assoc. Newsletter 1, 11.

Douglas J. E., Ressler K. E., Burgess A.W. Hartman C.R. (1986): *Criminal profiling from scene analysis*, Behavioral Science and Law 4, 401-421.

Hazelwood R., Douglas J. E. (1980): *The lust murder, FBI Law Enforcement Bulletin*, April 1-5.

Krsnich D. A. (1997): *Applications of polygraph to the psychopathic personality*, Polygraph 26 (2), 107-115.

Lykken D. T. (1957): *A study of anxiety in the sociopathic personality*, Journal of Abnormal and Social Psychology 55 (1), 6-10.

Widacki J. (2006): *Zabójca z motywów seksualnych. Studium przypadku*. [A killer with sexual motives. A case study], Krakow, 115-116.





# Book review





Jaworski, Ryszard (2006)

*Situational sequencing tests in polygraph examination(s)*

[Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego, 87 pp].

This book is an extension of what the author described in an earlier publication (Jaworski, 1998) in *Polygraph* (4, 253-270), the Journal of the American Polygraph Association. Here the author sets out the principles of what he refers to as a new technique, the Situational Sequencing Test (SST). The SST is structured deliberately to enable one to distinguish not just involvement in an offense, as is commonly done with the Control Question (CQ) or Relevant/Irrelevant (R/I) methods, but more specifically to determine what role, if any, a suspect played in an offense. The author describes his work this way: "This study presents a new polygraph examination technique, i.e., a method of determining the involvement of an individual in an event by measuring physiological parameters changing under the influence of emotions. I named the technique Situational Sequencing Tests (SST)."

In his opening chapter the author gives a description of the rationale for the SST and provides an outline and limited discussion of the legal and practical uses of polygraph testing in Poland. He points out that what is observed in more common testing approaches offers a basis for the use of the SST. For example, he notes that in conventional polygraph testing, e.g., CQ or R/I, a person who is the perpetrator of an offense may physiologically respond to a greater degree to questions about indirect aspects of involvement than to more direct relevant questions. Similarly, it is noted that persons who played no direct role in an offense but who have knowledge of it or who merely

assisted the perpetrator in some way may need testing approaches that differ from traditional methods. A relatively common situation in which the SST might prove helpful is a case in which multiple suspects confess but accuse each other as to their role in the most significant actions. Other examples include cases in which one suspect in a multi-suspect case confesses and assumes complete responsibility but there may be doubts about the validity of the confession; or when multiple suspects confess to participation but there is a claim that they don't remember the details and the evidence doesn't permit distinguishing their actual roles in the crime. These and other similar situations give rise to the application of the SST.

As I understand it, part of the reason the SST is important in Poland is due to the nature of the legal system and its position on polygraph testing. There polygraph testing is not used to "detect lies" or to determine facts related to the perpetration of the crime; rather it is employed to "detect memory traces." This is said to be the situation in Poland because of the legal system's view of expert opinion, which differs from the American legal system

The conceptual basis for the distinguishing feature of the SST is related to how one would structure questions in the proper application of the R/I procedure so that successive questions capitalize on the anxiety that may result when a perpetrator is asked questions proceeding from general aspects of an offense to more specific acts of involvement. In the SST the subject is asked questions regarding her or his role in a series of three question-lists, one list referring to items about witnessing, another about acts as an accomplice, and finally one about perpetrator actions. Jaworski states: "the effects of the technique of Situational Sequencing Tests (SST) presented in this study prove that physiological parameters of the examined subjects differ relative to their role in the event."

Subsequent to the first chapter in this book, that provides an overview and rationale for the SST, the author introduces material that most examiners are familiar with. Here, in chapter two, the author reviews what he sees to be the essential elements of various polygraph "techniques" in use, primarily those described in the literature published in the United States. This chapter is not complete and is not an accurate representation of "techniques" and the differences between them. The author, however, did not intend this chapter to be more than an overview. And, because he presumably has knowledge of techniques only from selected writings that are available in Europe, the lack

of detail and a somewhat less than accurate presentation is to be forgiven. With the exception of the last chapter of this book, each of the other chapters is devoted to a presentation and discussion of an individual case in which the author applied the SST. Each chapter here is very similar to what was done in the earlier article in *Polygraph*. In each case (Chapters 3-12) the author presents the factual information, usually the subject's defense and description of his/her acknowledged role and, importantly, the polygraph charts that were collected. The resolution of the case, including what occurred in court actions related to the offender(s), are also provided, often along with the author's perspective on the relationship between the outcomes of the legal proceedings and the polygraph testing.

I found it difficult to evaluate the value of the SST using the charts shown in this book. The copies of the physiological output (charts) were greatly reduced, the chart markings were not always clear and there were instances in which the discussion in the text didn't appear to match what was said to be indicated in the charts. Also, the physiological data that were shown generally were not consistent with the appearance of similar data that one would see in charts collected by what is said to be "good instrumentation" in the U.S. In short, the "responses" that were referred to by the author as significant were not always apparent to me. Nor was it always evident that some of the "trends" and other physiological indicators the author reported were actually of diagnostic significance. However, this is not to suggest that the SST or the charts collected in that procedure are necessarily without value. Rather, the displayed pictorial evidence, the charts, may need a different mode of presentation. I do need to say, however, that there were some instances in which the author's view appeared to be supported, suggesting, again, that it may be the presentation not the procedure that is a concern.

The SST is a very interesting and perhaps a quite useful way to approach testing in those situations where it is appropriate. Most experienced examiners are confronted on a regular basis with cases in which there is acknowledgement of involvement in an offense but at a lesser level than what the primary perpetrator did. Or, cases in which there is a question of which of two or more persons actually carried out the offense, e.g., murder, rape, etc., at hand. The recent case in the U.S. involving O.J. Simpson and his friends regarding an armed robbery is an example.

The author approached this topic as a case study, arguing that the usual statistical assessment in research on polygraphy is inadequate for doing what

he desired to show. That may be correct. But, even if all of what is displayed in the book were clear and easily discerned it would still be that an evaluation of ten cases does not establish a scientific foundation for the SST, especially so since how the cases were selected for inclusion here is not well specified. Nevertheless, the actual application of the SST is considerably different from more traditional approaches and it is worthy of serious attention. I'm sure the author would agree that additional evaluation on a larger scale is warranted and, I think he would also agree that he is to be commended for originating this method and disseminating information about it. I await further research and validation.

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To publication will be accepts unpublished research papers as well as review article, case reports, book reviews and reports connected with polygraph examinations.

Submitted manuscripts must be written in English.

All papers are assessed by referees (usually from Editorial Board), and after a positive opinion are published.

Texts for publication should be submitted in the form of normalized printout (1800 characters per page) and in electronic form (diskette, CD), or sent by e-mail to Editorial Office.

The total length of research papers and review article should not exceed 12 pages, case reports – 6 pages, and other texts (book review, report) – 5 pages.

The first page of paper should contain: the title, the full name of the author (authors), the name of institution where the paper was written, the town and country.

Figures should be submitted both in printed form (laser print, the best) and electronic form.

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The references should be arranged in the alphabetical order according to the surnames of the authors.

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Each reference should include: the surname (surnames) of the author (authors), the first letter of author's first name, the title of the book, year and place of the publication, the name of publisher, or the title of the paper, the full title of the journal, the year, the volume, the number and the first page of the paper.

For example (in references):

Reid J., Inbau F. (1966), *Truth and Deception: the Polygraph ("Lie-detector") Techniques*, Williams & Wilkins, Baltimore.

Abrams S. (1973), *Polygraph Validity and Reliability – a Review*, Journal of Forensic Sciences, 18, 4, 313.

and (Reid, Inbau, 1966), (Abrams, 1973) inside text.

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