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# POLYGRAPH

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Krakow University

*European Polygraph* is an international journal devoted to the publication of original investigations, observations, scholarly inquiries, and book reviews on the subject of polygraph examinations. These include jurisprudence, forensic sciences, psychology, forensic psychology, psychophysiology, psychopathology, and other aspects of polygraph examinations.

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## From the Editor

Dear Readers,

eager for *European Polygraph* to meet your expectations, we are introducing another modification. This time we launch two regular columns: Practicum, with our columnist Tuvia Amsel, PhD, and reviews of literature divided between our Western and Eastern eyes, i.e. offering digests of Western literature on the one hand, and of that written in Russian and Ukrainian on the other.



# Articles







Nathan J. Gordon\*  
Academy for Scientific Investigative Training  
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## A Field Polygraph Examination: Science or Art?\*

Полиграфические исследования на практике. Наука или искусство?

**Key words:** Polygraph Examination, Utah Zone Comparison Test, Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques

Recently I was asked to control the quality of a polygraph examination for a prosecutor performed on a suspect accused of molesting two young children. The polygraph performed for the defence was conducted by a high-profile academically recognised

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\*\* From the editor: The case seems obvious from the point of view of scientific methodology, and raises no doubts as such. Any individual polygraph examination, like any post-mortem or any expertise from the scope of forensic sciences, belongs to art. An art that is based on the achievements of science and results of scientific research. It is science that lays the foundation of the method that is applied and accepted as evidence. Its use in a specific case (expert opinion, including a polygraph examination) must conform to rules – state of the art. State of the art results from the achievements of science and practical experience. Practice, in turn, again undergoes the assessment of science. Thus, to recapitulate: a polygraph examination in a specific case works within the realm of art. The art of applying the achievements of science to every individual case.

examiner. The technique used was the modified Utah Zone Comparison Test, which resembles the AFMGQT2, a “C R R C R R C” format. Even if there was research validating the technique, which I am not aware of, how could the “artistic” ability or “quality” of such examination be taken into question?

The test was performed twice. The first test consisted of five (5) charts, making use of directed lie comparison questions (DLCQ). The actual questions are presented below, although the actual names have been eliminated:

1. Do you understand I will ask only the questions we have discussed?
2. Do you intend to answer truthfully all the questions about allegations that you sexually abused [Victim 1] and [Victim 2]?
3. Is your name [first name used]?
4. [D1] Did you ever tell even one lie in the first 18 years of your life?
5. [R1] Did you ever have oral sex with [Victim 1]?
6. [R2] Did you ever put your penis in [Victim 1]’s genitals?
7. [D2] Prior to age 19, did you ever break even one rule or regulation?
8. [R3] Did you ever have oral sex with [Victim 2]?
9. [R4] Did you ever touch [Victim 2]’s anus with your penis?
10. [D3] Did you ever make even one mistake before the age of 19?
11. Do you live in [State]?

Two (2) victims and four (4) alleged crimes in one test format! Where is the research supporting a test with 2 victims and 4 crimes in a single test? Five charts were administered, with the examiner selecting the Comparison Question on either side of the pair of Relevant Questions that was strongest, leaning the score toward a truthful outcome. The examiner scores were as follows:

R1	+3
R2	0
<b>R3</b>	<b>-3</b>
R4	+3

I scored these charts using the Horizontal Scoring System [1] and ASIT PolySuite [2] and obtained the following results:

R1	R2	R3	R4
<b>-21</b>	<b>-23</b>	<b>-46</b>	<b>-12</b>

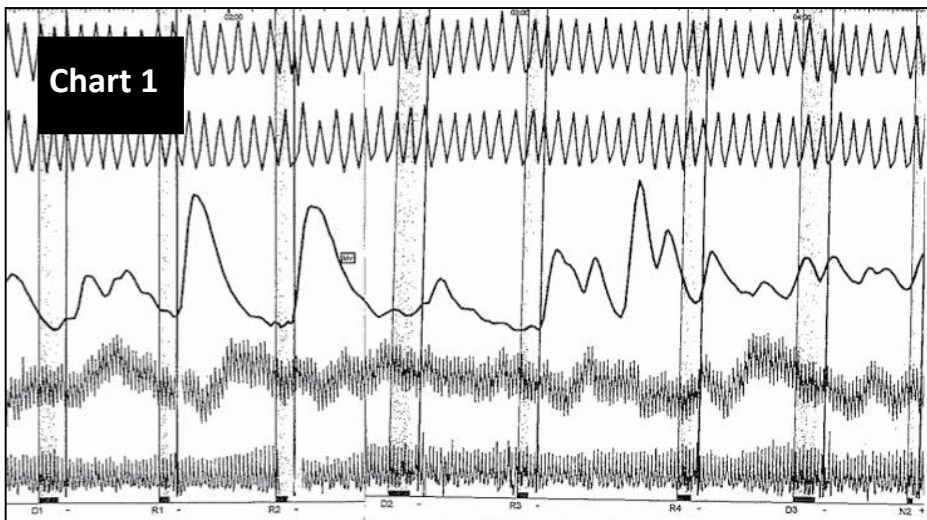
These same charts were blindly scored by four school directors and six government examiners. The examiners were only told that the test consisted of four different

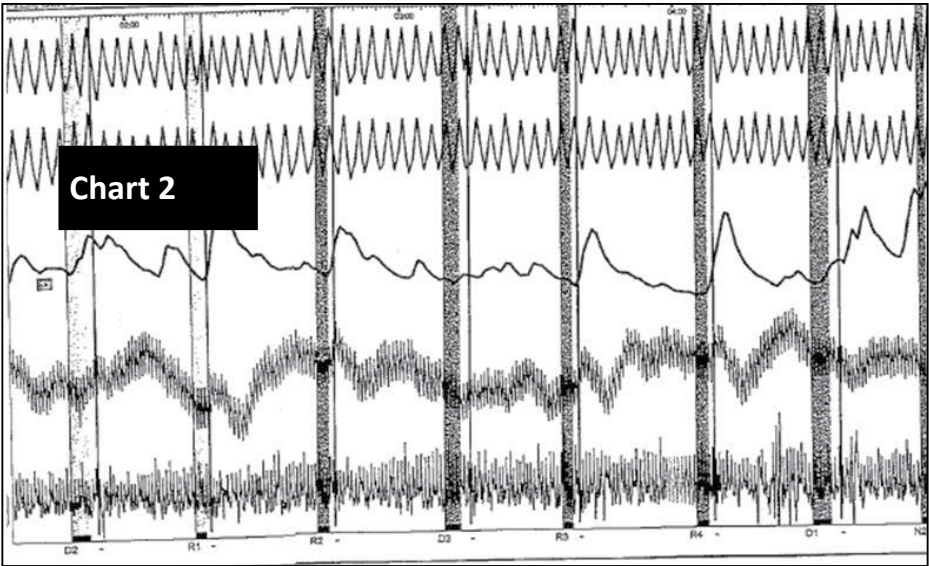
Relevant Questions. They had no idea what the questions were or who the original examiner was. All of the blind evaluators had determinations of deception.

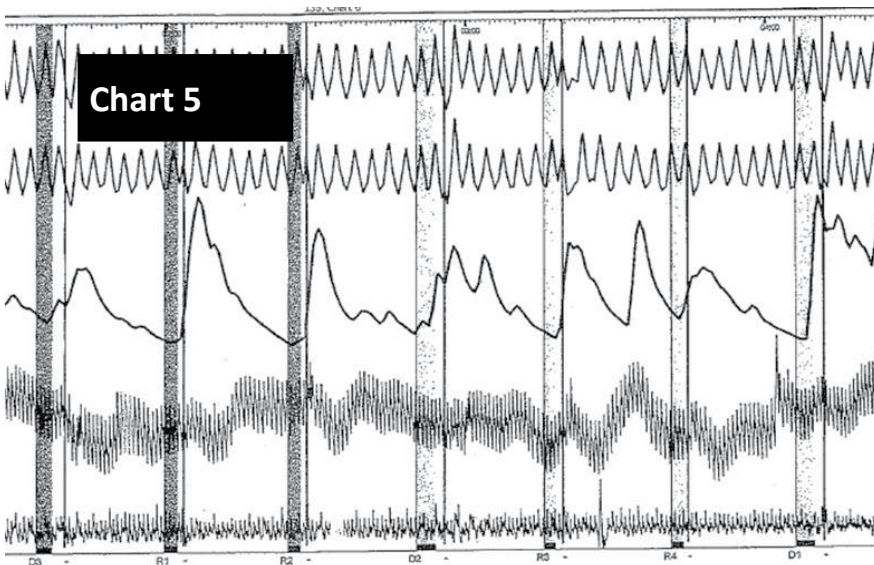
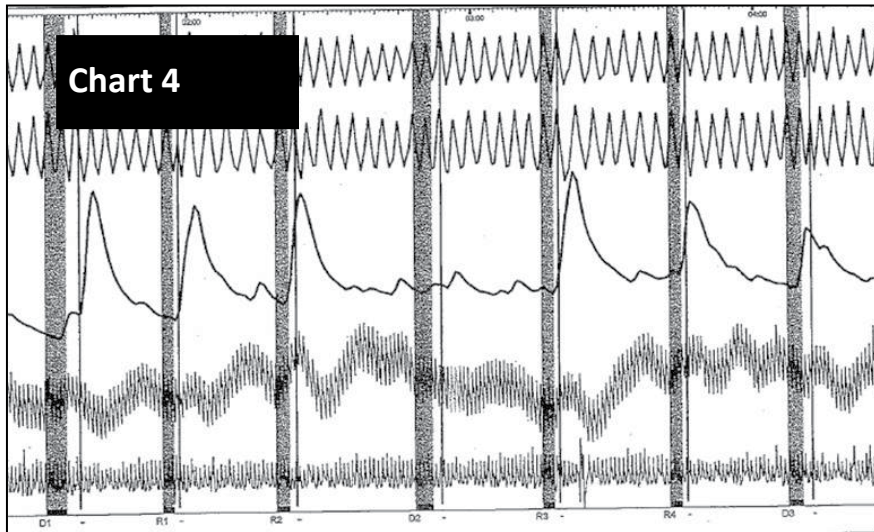
No evaluator was told which scoring system to use (3- or 7-point) but just to score and report vertical scores and decisions using standard cut offs. They analysed 24 spots and determined 22 to be DECEPTIVE and 2 to be INCONCLUSIVE. The following were the scores of the six blind Government examiners:

Examiner 1	R1	R2	R3	R4
<b>-8</b> <b>-8</b>	<b>-5</b>	<b>+1</b>		
Examiner 2	R1	R2	R3	R4
<b>-3</b> <b>-9</b>	<b>-10</b>	<b>-8</b>		
Examiner 3	R1	R2	R3	R4
<b>+3</b> <b>-4</b>	<b>-7</b>	<b>-3</b>		
Examiner 4	R1	R2	R3	R4
<b>-5</b> <b>-4</b>	<b>-7</b>	<b>-6</b>		
Examiner 5	R1	R2	R3	R4
<b>+3</b> <b>-9</b>	<b>-12</b>	<b>-4</b>		
Examiner 6	R1	R2	R3	R4
<b>-3</b> <b>-2</b>	<b>-9</b>	<b>-5</b>		

Fig. 1. The five (5) crime charts administered in Test 1:







The blind evaluators made the following comments: some of the EDA responses are questionable. There seems to be movement at places that were ignored. There was no movement sensor used even though the test was administered after the APA deadline requiring its inclusion.

The original examiner had a -3 at R3 indicating a “Significant Response” and found the test inconclusive. What should have been the next step then? I would think you would use the generally accepted hurdle approach and run a more accurate single issue zone on R3, the Relevant Question that showed a “Significant Response”. Instead, the examiner changed all of the DLCQs to Probable Lie Comparison Questions. We have no idea as to how the new “Comparison Questions” were introduced or stimulated. The Relevant Questions were slightly reworded but contained the same material. In this way three charts using the following questions were collected:

1. Do you understand I will ask only the questions we have discussed?
2. Do you intend to answer truthfully all the questions about allegations that you sexually abused [Victim 1] and [Victim 2]?
3. Is your last name [Name]?
4. PLC1. Did you ever engage in a sexual act that you were ashamed of during the first 20 years of your life?
5. R1. Did you ever have mouth to genital contact with [Victim 1]?
6. R2. Did you ever touch [Victim 1]’s genitals with your penis?
7. PLC2. Between the ages of 18 and 21, did you ever think about having sex with a minor?
8. R3. Did you ever have mouth to genital contact with [Victim 2]?
9. R4. Did you ever touch [Victim 2]’s anus with your penis?
10. PLC3. Did you ever take advantage of someone for sexual purposes before the age of 21?
11. Do you live in the United States?

With the following scores, the examiner decided to find the subject TRUTHFUL:

R1	+1
R2	+2
R3	+5
R4	+6

I scored these charts using the Horizontal Scoring System and ASIT Poly Suite and had the following results:

R1	R2	R3	R4
<b>-16</b>	+2.5	+9	<b>-9.75</b>

These same charts were again blindly scored by four school directors and six government examiners. All the blind evaluators also had determinations of deception. I did not get to testify in the case because polygraph evidence was never introduced. The perpetrator plead guilty to all charges.



Researched formats are fine; however formats in my mind are not aligned with polygraph techniques. There is much more to polygraph technique than just question structure.

Although some of our fellow professionals wish polygraph to be pure science, it is not fully so. Polygraph is an art, based on principles drawn from the sciences of psychology and physiology. As a profession, we should continue research to validate what we are doing and to improve the art we practice. We cannot allow ourselves to be led down a path that misleads us to believe that what we do is purely a science that will eventually require examiners to possess doctorates to administer it. The skill of an examiner is an art, and it is just as important as the scientific aspects involved in polygraph. As this test clearly demonstrates, academic credentials do not equate to being an elite examiner any more than validating a question structure validates a polygraph technique.

## References

- [1] Gordon N., Cochetti P., The Horizontal Scoring System, *Polygraph*, 1987, 16, 2, pp. 118–125.
- [2] ASIT PolySuite is a manually driven computerised algorithm for analysing polygraph data.

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## The First Polygraph?\*

Первый полиграф?

**Key words:** Polygraph, Inc-Polygraph, History of Lie-Detection

In 1953, *The Journal of Criminal Law, Criminology and Police Science* (No. 5, pp. 679–681) published by the Northwestern University in Chicago reprinted an article by James Mackenzie on “The Ink Polygraph”, originally published by the *British Medical Journal* in 1908 (Vol. 1, p. 1411).

Mackenzie’s article was preceded by an introduction by Professor Fred E. Inbau (1909–98), an unquestioned authority not only on polygraph testing and interrogation techniques, but also on criminal trials and forensic studies (he was among others, a long-term director of the Crime Detection Laboratory). The material as a whole, i.e. Mackenzie’s article together with Inbau’s introduction is entitled “The First Polygraph”.

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\*\* Project DEC-2013/11/B/HS5/03856 funded by National Science Centre.

In his introduction to Mackenzie's article, Inbau remarked that when the history of lie detection techniques is discussed, hardly anyone notices that the name "polygraph" existed at least as early as 1906 (Inbau 1953, 678). He goes on to comment that the device in question, albeit constructed not for lie detection but for medical examinations, was nonetheless based on the same principles of construction as a lie detector. Following Fred Inbau, many authors repeated this information, as imprecise as it was untrue, suggesting that the device constructed by Mackenzie was the first one to be called "a polygraph" (Kniaziew, Warlamow 2012; Matte 1996).

In his article, Mackenzie wrote that at a meeting of the Medical Section of the British Medical Association in Toronto in 1906, he demonstrated a method of recording the movements of circulation by means of an ink polygraph. The polygraph recorded the circulation, registering pulse frequency and respiratory functions. This was nothing new, however. Since the end of the 19th century, respiration had been analysed with a pneumograph: a device that recorded the movements of the chest or diaphragm. The most popular construction was Marey's pneumograph, developed by a French scientist and inventor, Étienne-Jules Marey (1830–1904).

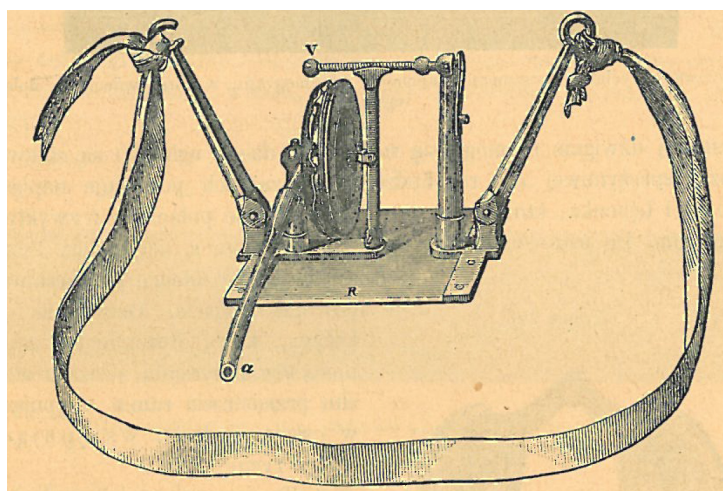


Fig. 1. Marey's pneumograph (N. Cybulski 1895).

Heart activity and blood circulation were observed with a sphygmograph, which made it possible to observe the pulse. The first sphygmograph was constructed in 1854 by a German physiologist, Karl von Vierordt (1818–84). It consisted of a bar placed on an artery that was fastened to the forearm with a strap. The movement of the bar was a function of pulsing of the artery.

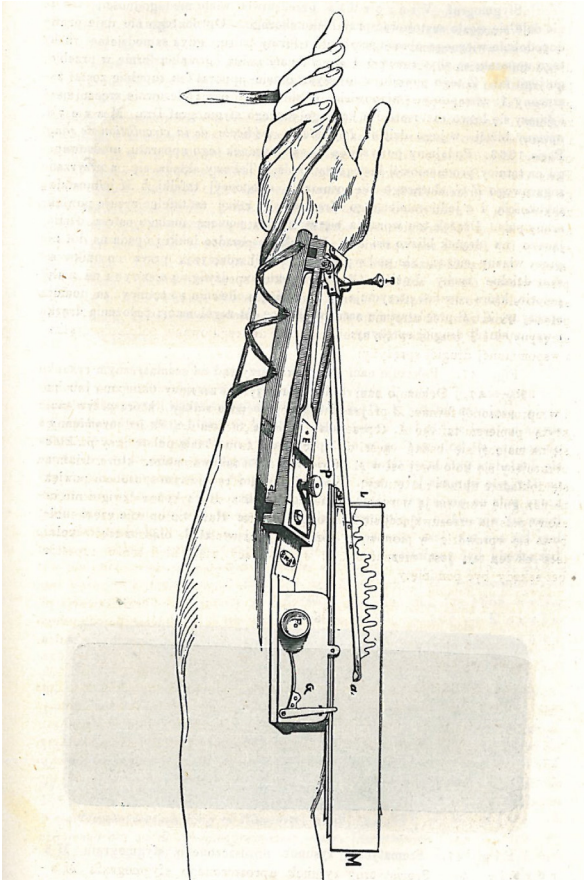


Fig. 2. Von Vierort's sphygmograph (H. Hoyer: *Fizyologia*, Warszawa 1872).

A design that could be connected to the pneumograph to produce the respiration curve, or with a sphygmograph to plot a curve recording the action of the heart (pulse beats), known as the kymograph, was constructed by a German physiologist, Karl Ludwig (1816–95). Some authors believe that the kymograph was constructed independent of Ludwig and even earlier, namely in 1846, by an Italian, Carlo Matteucci (Emeryk-Szajewska 2008). Its construction was relatively simple: a clockwork was attached to a drum and it was wrapped in a sheet of blackened paper revolving at a constant speed. The device, whether a sphygmograph or a pletysmograph, transmitted mechanical impulses collected by the original device to the stylus of the kymograph, which drew (or more precisely: erased), a white curve on the blackened sheet.

The sphygmograph, sometimes also known as a cardiograph and combined with a kymograph, was used late in the 19th century in experiments conducted by Angelo Mosso (Mosso 1891) Cesare Lombroso (Lombroso 1891) and others. A pneumograph connected to a kymograph was used in the experiments of both Benussi (Benussi 1914) and Abramowski (Abramowski 1913)



Fig. 3. Kymographs (Museum of the Jagiellonian University).

The kymograph was used as early as the 19th century for the simultaneous recording of data coming from the pneumograph and sphygmograph. The device thus constructed was known as a “polygraph”, i.e. a device for recording more than one function (Greek: *poloi* – multiple, *graphos* – to write). Such a name was used to denote the combination of a kymograph with a sphygmograph or pneumograph in the 19th century by Napoleon Cybulski (Cybulski 1895) and somewhat later by Leon Zbyszewski (Zbyszewski 1914). Thus European continental literature had applied the name “polygraph” for at least over a decade before Mackenzie used it. This demonstrates that rather than inventing the name, Mackenzie just mentioned it. The range of devices he mentioned included “sphygmograph”, “the polygraph”, “the clinical polygraph”, and “the ink polygraph”.

According to Mackenzie, the clinical polygraph “can be used for taking, at the same time and on the same recording surface, tracings of the radial pulse, with tracings of



the apex beat, carotid, venous, or liver pulse, or respiratory movements, and its size permits it being carried out with the greatest facility, and readily employed in general practice" (Mackenzie 1910, 68). He explains further that "the essential part of the instrument [clinical polygraph] is a small cup for receiving the impressions of the pulsations, a tube for transmitting the impressions to a tambour and the lever the tambour is attached to (...) sphygmograph" (Mackenzie 1910, 69).

The "ink polygraph" was an enhancement of the "clinical polygraph". Mackenzie arrived at the conclusion that "it was not convenient when the movements had to be recorded over a long period, as where the irregularities were infrequent, or where they varied, or where respiratory curves were required. [He] therefore conceived the idea of constructing an instrument that would take tracings of an indefinite length, where the employment of ink would enable a roll of paper to be unwound, and save as well the inconvenience of blackening and varnishing" (Mackenzie 1910, 72).

Subsequently, with his assistant S. Shaw, Mackenzie constructed a device called the "ink polygraph". The novelty was that rather than turning a drum wrapped in a sheet of paper, as in kymographs, the clockwork (A) set in motion a roll of paper (D). Another clockwork moved the time-marking pen (F), two tambours (BB) and their levers (FF). The levers were connected to pens, and ink was poured into a small container and it reached the pens through capillaries.

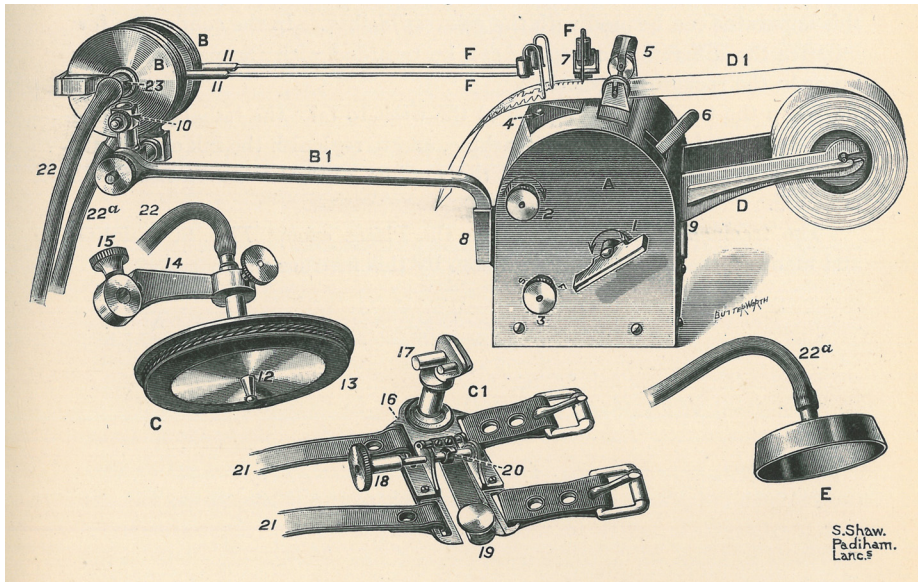


Fig. 4. The ink polygraph (J. Mackenzie 1910).

There were two fundamental changes in the improvement introduced by Mackenzie. First, he replaced the tambour wrapped in blackened paper used in kymographs with a roll of paper. The stylus or slate pencil erasing a white curve on the blackened paper was replaced by an ink pen that drew a curve on the white roll. This was certainly a major development, and the upgraded system of recording was later used in analog polygraphs.

Thus, James Mackenzie certainly modernised the manner of recording physiological functions of the human organism that had been observed and recorded many years before him. It should likewise be recognised that he was not the first to use the name “polygraph” to denote a device that simultaneously records more than one single physiological function of the human organism as the name had been used over a decade before him for the combination of a sphygmograph and pneumograph with a kymograph.

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# Practicum

Advances are made by answering questions.  
Discoveries are made by questioning answers  
by Tuvya T. Amsel\*

## Case study

One early morning, a man rode his bike to the kindergarten with his 3-year-old daughter. That was about the only quality time he had for himself before the hectic day awaiting our man, a top business tycoon. He parted from his daughter with a hug and a kiss, and was ready to go home when someone approached him, introduced himself as a police detective, and arrested him for sexually molesting his daughter. His house was searched for paedophile materials but nothing was found. His wife was arrested for conspiracy while taking their son to school. Both were interrogated for hours, denying the allegation and demanding to be polygraphed. The man took the test next day and failed it. In the afternoon he was confronted with the complainer: the kindergarten teacher. After the confrontation, the teacher confessed that she made up the whole story because her best friend who worked in one of the

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tycoon's companies was fired. Case closed, all allegations dropped. Yet, the polygraph failed by scoring *a false positive*.

The case was analysed later at the police polygraph lab that conducted the test. It seemed flawless: conducted by an experienced examiner, with a prolonged textbook pre-test, in APA validated Utah ZCT PLC test format, with the acquaintance test, 3 repetitions, clear charts, and a distinct numerical scoring of DI. Yet, the man was innocent. The chief examiner, a validated protocols fanatic, concluded the analysis by saying: "research shows that false results are expected and are part of our practice". And that was it; case closed. Was it, however, inevitable or was it a result of rigid adherence to a test protocol and a failure to pay attention to some possible potholes present in such tests?

A polygraph test is basically an venture into the examinee's mind and soul, and these may not be simple at all because of our personality types as well as circumstances. It is the examiner's responsibility to perceive possible contaminating factors that might affect the test resulting in a false conclusion, and to deal with them. Spanning over 35 years and over 25,000 polygraph tests, my experience has taught me that examiners *should not adjust the examinee to the test but rather adjust the test to the examinee*.

The purpose of this column is to share my experience with my fellow examiners, discuss some common phenomenon that we practice, and suggest possible remedies. You are all more than welcome to express your views, raise doubts, and/or share your experience.

Recently we witness a growing tendency of "manualising" everything. Books telling us "How to...", designed "...for Dummies" and others of that ilk suggest remedies to all aspect of life. Though being a strong believer in the necessity of protocols and checklists based on solid research, I perceive a down side in those, namely a protocol that, if followed rigorously, may turn a polygraph examiner into an experienced technician, and remove from the picture discretion and flexibility: commodities that are necessary as they let the examiner handle subjects not as a text book models but as unique individuals.

I would like to take this opportunity to thank Professor Widacki and the editorial staff of *European Polygraph* for enabling me to express my views.

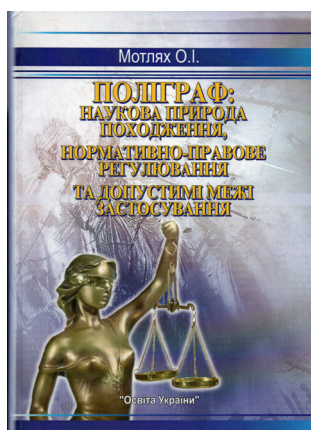
PS: The reason behind the false positive result in the case study mentioned above will be given in one of the forthcoming issues.

# Literature review

Look from the East...







Motlyah O.I., *POLYGRAPH: Scientific Nature of Origin, Legal Regulation, and Application Limitations.*

*Monograph*

[Мотлях О.І., *Поліграф: наукова природа походження, нормативно-правове регулювання та допустимі межі застосування* (In Ukraine)]

Osvita Ukrainy (i.e. "Education in Ukraine"), 2012, 394 pp.

The author of the monograph, Motlyah Aleksandr Ivanovych, a well-known Ukrainian scientist and leading researcher in Problems of Pre-Trial Investigation scientific laboratory in Educational and Research Institute No. 1 of the National Academy of Internal Affairs, Doctor of Law, professor, and esteemed Ukrainian jurist.

The monograph describes in detail the historical stages in the formation and development of psychophysiological instrumental method of lie detection. The author

analyses development of lie detection techniques in a historical perspective: from antiquity to the present. He also studies development of these techniques in different countries, while special attention is paid to the description of particularities of using instrumental methods of lie detection in the USSR and some CIS countries later.

The book presents an analysis of the legislative regulation of using the polygraph. Taking into account international and Ukrainian practices, the author considers ways of using polygraph in contemporary social relations as well as possibility of introducing polygraph test in law enforcement for investigation and solution of crimes. One of these sections is devoted to the technique for preparing and conducting test interviews with criminal suspects to establish objective truth in the case.

The author also suggests procedural forms for documenting results of the expert polygraph psychophysiological investigation by creating a new type of forensic examination. Procedural issues of securing evidence obtained by polygraph examination and a mechanism for improving the criminal procedural legislation in Ukraine are addressed.

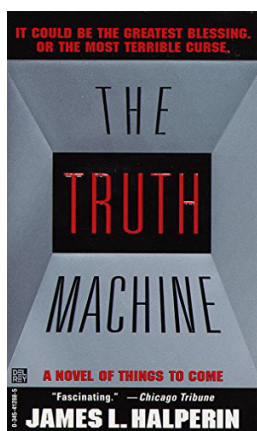
The monograph is intended for use in educational process, practical activities, and scientific pursuits.

Vitaliy Shapovalov

# Literature review

Look from the West...





James L. Halperin,  
*The Truth Machine:*  
*A Novel of Things to Come,*  
Ballantine Books, NY, 1996.

The book can be downloaded for free from: <https://coins.ha.com/information/ttm.s>

The “truth machine” is such a natural nickname for the polygraph that when an examiner sees it as book title, reading it becomes a must. Judging by the title, one would expect the author to be a polygrapher, psychologist or jurist but surprisingly the author James L. Halperin is an American businessman specialising in numismatics (the study or collection of currency, including coins, tokens, paper money, and related objects) who even wrote a textbook on how to grade coins (*How to Grade U.S. Coins*), which the grading standards were ultimately based on.

The author’s profession is not the only surprise, as the book is not even directly related to polygraphy. It is a science fiction novel, or Halperin’s version of *1984*. Yet, the philosophy that stands behind the novel, albeit with a potential to leave us examiners unemployed, is closely related to our profession and daily practice, that is unveiling the truth behind the lies.

The book was presumably written in July 2050 in Dallas by a computer named Intel 22g (a contextual processor with 22 billion instructions per microsecond) CP-TL-Mos from the series 2046, especially designed for reportage”, and describes the latest 50 years in human history and the personal history of the inventor of the ultimate lie detector offering 100% accuracy. The need to invent such an instrument developed after violent crime became number one political issue in the US and led to the Swift & Sure Anti-Crime Bill that guaranteed previously convicted violent criminals a fair trial, a quick appeal, and subsequent immediate execution. To prevent abuse of the law, a fool-proof, 100% accurate instrument had to be invented and manufactured.

The book tells the story of Randell Peterson “Pete” Armstrong who was five years old when his younger brother was kidnaped and murdered by an ex-convict just released from the prison, and this despite a psychiatric evaluation that he would murder again as soon as he is at large. On recovery of his brother’s body. Pete addressed an FBI agent in charge of the case and wondered “He [the psychiatrist] *knew* Reece [the kidnapper and assassin] was still dangerous. Couldn’t *he* keep him in jail?” This results in a following conversation: “Once someone is sentenced, as long as they don’t break any more laws, we can’t hold them in jail any longer than the courts tell us to.” “Even if they might *kill* someone?” “We have to assume a person’s rehabilitated until they do something wrong. Otherwise people could stay in jail forever just because someone else *disliked* them.... The problem is, we never know for sure who’s a threat and who isn’t. We can’t keep everybody in jail just because they *might* be dangerous. We can’t predict what people will do because we can’t read their minds.” This is what triggered the 5-year-old-young genius Pete to invent a fool-proof “Truth Machine”. The idea became operational when Pete was 12 and already a freshman at Harvard. At the time a classmate asked him “What do you think would happen if scientists built a machine that could tell with absolute certainty if a person was telling the truth? [...] But this machine would have to be so precise that it could be used as conclusive proof of guilt or innocence in our court system. Today our ability to lie actually threatens our survival. [...] Deceit is a major instrument and a major cause of war. Sociopathic dictators, who have always used war to amass power, could never wage war without lying to their populaces. And without deceit, honest conflicts become easier to resolve because each side’s statements are believed by the other.” A classmate who opposed the idea said: “Evolution probably favors the ability to lie effectively. [...] It’s human nature to lie at certain times. [...] You can’t change human nature in one generation just by changing the rules.” To which Pete responded “I think you *can*. [...] We do adapt to reality. [...] Lying is just an easy way for people to get what they think they want. I bet we can teach people not to lie by taking away the payoff.”

The concept of the “truth machine” was in the focus of attention of the crime prevention vision of the US President and of a law that promised riches to its developer. Upon graduation from Harvard, Pete established a company that concentrated on developing the “truth machine”. By the time it went public, it worked on programmes to aid the legal system and society in general, and to support financially the development of the “truth machine”.

In 2024, after almost two decades of research and development, the “truth machine” officially known as the Armstrong Cerebral Image Processor (ACIP) or SCIP (scan cerebral image patterns) become operational, and was soon integrated into the legal system. The notion behind the instrument was that “each human brain has its own wave patterns, as unique as the DNA. While the patterns change continuously, certain aspects remain constant, particular to the individual”. Unlike in case of the polygraph, the examinee is interviewed and questioned without the use of a structured test. Upon deception a red light blinks and a bell rings.

Once operational, the use of the “truth machine” expanded beyond the criminal justice system. Shortly, and this might be a spoiler, everyone seeking a job or applying for any kind of license has to pass the “truth machine” test. Eventually, people wear their “truth machines” constantly, thus eliminating being lied at. The impact of the invention is tremendous and – as lying has now become impossible – it affects all phases of life from crime via human interpersonal relations and politics to basically every aspect of life. The author fantasises on a future utopian world that most of Americans would like to live in, despite certain tough laws and regulations.

Unlike the dark futuristic world portrayed in *1984*, Halperin’s future world drifts on pink clouds and from the 2016 perspective seems exceedingly optimistic and naïve, yet who knows: humans are adaptable.

Last but not least; although it belongs to the sci-fi, the book has traits of a whodunit and a surprising ending, but... there have been enough spoilers.

Tuvya T. Amsel







## Synopsis of articles from Polygraph 2015 (vol. 45) & 2016 (vol. 46)

### • Handler M., Nelson R., & Gougler-Floyd A. (2016), **Alternative Locations for the Cardio Cuff. Is it Safe? Are the Data Similar?**, Polygraph 45 (1), pp. 54–56

The traditional blood pressure cuff used for polygraph testing has a negative impact on some examinees due to the blockage of the veins that in return affect the blood flow resulting in loss of sensation and/or skin colour changes that alarm some examinees. The article reviews alternative devices that measure blood pressure and alternative positioning of the blood pressure cuff as means of replacing the traditional cuff. The authors introduce the following alternatives:

- Finapres – a device that measures blood pressure continuously in the finger. Podlesney & Kircher (1999) found that the Finapres offered significant correlation with the traditional cardiograph (for diastolic changes the regression coefficient mean was  $r = 0.84$ . For systolic changes, the mean was  $r = 0.74$ .)



FMS | Finapres

- Finger cuff – Dollins & Cestaro (1997) suggest that the finger cuff is not suitable for replacing the arm cuff due to less than sufficient correlation with the results obtained from it.



Limestone Technologies

- Lower leg or calf is an alternative location of the cuff, in which case the primary artery being monitored is the posterior tibial artery. Yet, the medical community raises concern about the location when monitoring examinees with deep venous thrombosis (DVT). Thus the selection of location should be chosen carefully to avoid blood clots or thrombi.
- Placement of the cuff on the forearm is suggested by American Association of Critical Care Nurses. Blood pressure cuff is placed on the forearm may be better tolerated by some test subjects, even at pressures of 80–90 mmHg.

In order to replace the arm cuff, any measuring instrument or placement method should show a high degree of correlation with the arm cuff unless replacement is very similar in design and use. In this case differences in tracings are expected, which can introduce unknown variability into polygraph scores. Initial simulations sug-

gest that a correlation coefficient of 0.97 will be sufficient to constrain differences in scores to within 0.5 point with both subtotal and grand total scores. If this correlation is achieved, examiners can expect the test precision and error rates to lie within known and established alpha boundaries.

• **Handler M., Honts C., Goodson W. (2015), A Literature Review of Countermeasures and Comparison Question Technique, *Polygraph*, 44 (2), pp. 129–137**

The article reviews history of research on the impact of countermeasures (CMs) on the comparison question technique (CQT). Before embarking on the review, the authors define CMs and classify various existing types to offer later a brief synopsis of 15 papers that investigate CMs.

The review is followed by answers to the most frequently asked questions regarding CMs.

The review gives a condensed overview of the issue and makes the article important to any polygraph practitioner in need of a quick reference guide on countermeasures.

• **Prado R., Grajales C., Nelson R. (2015), Laboratory Study of Directed Lie Polygraphs with Spanish Speaking Examinees, *Polygraph*, 44 (1), pp. 79–90**

Polygraph examinations are practiced all over the world, in probably close to a hundred different languages. We all take for granted the fact that regardless of the language spoken by the examinees; the polygraph test techniques will eventually reveal the truth, yet this belief was not directly researched. Although the scope of the research was to examine the diagnostic accuracy of an event-specific comparison question test format in a laboratory setting, the fact that the outcome is similar to research done in other languages gives certain support to this belief.

A group of 114 randomly selected participants were divided into two equal subgroups of people innocent and guilty of stealing money from a backpack (mock crime). The participants were tested with a questionnaire that consisted of twenty-two questions presented in a single sequence. The questionnaire was a single issue event-specific format that included a repetition of the two relevant questions and two directed lie comparison questions four times, thus all together including 22 questions: 2 neutral questions in positions 2 and 8, and repeated at positions 13 and 18; 1 sacrifice relevant question in position 3; 2 relevant questions in positions 5 and 7 (first presentation), repeated at positions 10 and 12 (second presentation), and 15

and 17 (third presentation); and finally in positions 20 and 22 (fourth presentation); 3 directed lie comparison questions in positions 4, 6, and 9, repeated at 11, 14 and 16 (second presentation), and again at positions 19, 21 and 23 (third presentation).

Analysis of the tests produced an unweighted accuracy of 87%, with 18% inconclusiveness rate, sensitivity of 80%, and specificity of 93%. Reliability acc. to Kappa's statistic was 0.73. Study results suggest accuracy greater than chance, which is consistent with other existing techniques. In addition, the results show that the effectiveness of polygraph examinations conducted in Spanish is similar to those conducted in English.

• **Nelson R. (2015), *Scientific Basis for Polygraph Testing*, *Polygraph*, 44 (1), pp. 28–61**

This paper provides all the necessary information needed for the non-expert to understand what polygraph is, while experts will find neatly and orderly structured information. The paper contains complete crucial information on the polygraph described in a crystal clear manner and supported by extensive references on research. Although the information in the paper is not new, the way it was put together perhaps makes it the best paper to describe “polygraph in a nutshell” with information to be internalised by all practitioners.

The paper starts by explaining the difference between diagnostic and screening polygraph tests to continue to the description of the three phases of polygraph examination: the pre-test interview (and the differences between the free narrative, structured and semi-structured interviews, and questions review), in-test data collection (to include explanations of question structures and test formats), and test data analysis (which describes the numerical scoring). Following the description of a polygraph test, the author proceeds to the successive, deeper layer of polygraph examinations: the physiological and psychological basis of the polygraph followed by one of the most critical questions faced by examiners: the accuracy of polygraph tests. Being aware of the fact that polygraph results are probabilistic and thus not perfect, the author discusses such test pitfalls as countermeasures, “friendly examiner”, and testing psychopaths. The conclusion of the paper starts from the contribution of polygraph results to professional decision making.

The author is understandably a zealous supporter of “evidence based practice”, and indeed the explanations offered in the paper are evidence based and well supported. Yet, evidence based practice is a “holy” triangle (like the “fire triangle” – oxygen, heat, fuel) that integrates 1) the best research evidence, with 2) the examiner's profes-

sional expertise and discretion while considering 3) the examinee's individual conditions and personality. All the three matter for the decision making process. While the author is aware that more skilled interviewers produce better information from the examinee, he does not examine the issue more deeply, nor does he discuss contaminating factors affecting the test or the situational conditions that may affect the test outcome. Yet, judging by the author's previous publications a future "part two" of the paper is believed to cover these issues.

Tuvya T. Amsel



# Report Discussions, Polemics







*International Society  
of Polygraph Examiners (ISOPE)  
1st International Seminar  
Guatemala City, Guatemala*

The first international seminar of ISOPE was held in Guatemala City, on 16–19 August, with 60 participants from Guatemala, Honduras, Mexico, Nicaragua, Costa Rica, and the United States. It was hosted by Grupo R&T of Guatemala, with support from the Lafayette Instrument Company.

Dedicated to the enhancement of the polygraph profession throughout the world by providing standards of practice, validated polygraph techniques, instrumentation, published research ethical conduct, progressive training seminars and continued education in the field of forensic psychophysiology, ISOPE was formed in 2013. The Society's membership criteria, bylaws, and standards are a lodestar for all practicing professional examiners, and the opportunity to participate helps to upgrade their skills.

Members receive access to *European Polygraph*, a journal edited by Professor Jan Widacki, and to the *ISOPE Research Digest*, edited by James Matte.

Lectures were delivered by Nathan J. Gordon, President of ISOPE, Tuvia Shurany, Vice President of ISOPE, and Yazmin Bronkema of the Lafayette Instrument Company. The first lectured on technique development with focus on the Backster family of techniques: Backster You Phase, Federal Zone, Air Force Zone, Matte Quadri-

Track, Utah Zone, and Integrated Zone. He also presented the Morgan Interview Theme Technique and Forensic Statement Analysis. Mr. Shurany's presentations included the Backster Zone and psychological concepts, including his recent research published in *European Polygraph* and demonstrating that the anti-climax dampening concept does in fact exist, the Concealed Information Test, Polygraph Validation Test, and Countermeasures and Counter-counter measures. Ms Bronkema presented Lafayette's most recent software (version 11.6), and covered some of the changes in the new application and its operation.

Grupo R&T did an excellent job in hosting the event. A booth was set up for interpretation between Spanish and English, with Fabiola Chaves, a polygrapher from Lie Catcher (Costa Rica) helping to bridge the language gap. The participants listened intensely to the lectures and tried to absorb as much as possible to enhance their professional skills in the art of truth validation. Many attendees decided to join ISOPE during the event.

Future seminars are now being planned throughout Europe, the US, and Africa.

N.G.

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

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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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