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Examinee Assessment of Distress Caused by Polygraph Examination

Обременительность полиграфного тестирования в оценке лиц прошедших испытание

Key words: Arduousness of polygraph examination, Examinee

Introduction

Scientific papers on polygraph examination seldom point to the issue of examinee distress. Lawyers on the other hand are known to level charges against admissibility of such expert opinions and claim that a polygraph examination is too uncomfortable for the examinee. Widacki (2001: 128–129) criticised beliefs of Polish lawyers concerning the potential influence of examinee anxiety on the outcome of a polygraph examination, as such beliefs are not based on results of empirical research. A professional polygrapher should distinguish nervousness from other reactions. Standards of polygraph examination techniques (with procedures for curve interpretation) include safety barriers that let the examiner minimise the risk of making

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a mistake caused by examinee stress. One of them is the zone of inconclusiveness (Kircher, Raskin: 309–310; Gołaszewski: 230–239).

Specialist literature discusses mental and physical health of the examinee, yet it focuses on demands or instructions (Budaházi: 163–164) rather than to present the examinee's view of polygraph examination. Many more or less professional websites discuss polygraph examinations.[1] Their authors assure visitors that the subject feels no pain during the examination. They only mention a slight pressure on the arm caused by the blood pressure cuff. The cuff is described as exactly the same as used by medical practitioners.

Every case of a polygraph examination may be a difficult for the subject's psyche (Leśniak). Ethical norms should be taken into consideration. If a certain boundary of distress or discomfort were to be exceeded, polygraph examinations should be considered inadmissible. Therefore, the authors of this paper believes that it makes sense to ask the subjects about the distress or discomfort caused by polygraph examination. The main purpose of the research conducted was to find answers to the following issues:

- How do examinees estimate the level of distress caused by polygraph examination?
- Do they believe that undergoing polygraph examination is more uncomfortable than undergoing a routine medical procedure using technical equipment?
- Does the sense of distress depend on the subject's gender?
- Do personality traits influence the estimation of distress caused by the examination?

The research was carried out in a laboratory. Critics may have reservations about differences between such situation and polygraph examinations used for criminal investigation, an opinion the authors agree with, albeit only to a point. The level of (dis)comfort in polygraph examinations should be similar, which after all is a matter of applying standards. The degree of distress experienced or reported depends on a combination of stimuli from the environment and personality traits. People perceive their particular situation through traits of their personality (Tomaszewski).

[1] An example of such website is www.polygraphia.ca/questions_polygraph_examination .html#3 [accessed on 30 March 2017]

Method

The variable "distress caused by polygraph examination" was operationalised by means of six seven-point subscales (without separate descriptions). The subjects were instructed that the larger the number the greater the distress, with 1 standing for lack of distress and 7 denoting a feeling of extreme discomfort. The following seven-point subscales were distinguished within the variable:

- general distress caused by polygraph examination
- feeling of being treated like an object during the examination
- feeling of discomfort caused by remaining motionless during the examination
- feeling of discomfort caused by the blood pressure cuff
- feeling of discomfort caused by the rubber tubes of the pneumo sensor
- feeling of discomfort caused by the GSR sensors.

Two additional five-point subscales (with descriptions) were used to compare:

- distress in polygraph and medical examination procedures using technical equipment
- the feeling of being treated like an object during polygraph and medical examination.

The dependant variable "the total distress of polygraph examination" (measured on a numerical scale) consisted of the sum total of the six seven-point subscales.

The variable "personality traits" was operationalised by means of eight Interpersonal Style Scales (ISS: I–VIII) as devised by Stanik (Różańska-Kowal, Stanik). The method is based on the theory of interpersonal functioning by Sullivan and Leary. Points on the scale from I to VIII correspond to the following styles of interpersonal functioning: managerial-authoritarian (I), supporting and overly protective (II), cooperatively-friendly (III), submissively-dependent (IV), retreating-masochistic (V), rebelliously-suspicious (VI), aggressively-sadistic (VII), and competitively-narcissistic (VIII).

The examinees were subjected to polygraph examinations conducted as part of research for master degree dissertation by Czupryna. Its subject concerned the issue of countermeasures, and was written under the supervision of one of authors of this paper. The examiner subjected the participants to a one-hour-long test, and the subjects were asked to fill in two questionnaires (one with seven-point and five-point subscales, and the Interpersonal Style Scales) immediately after the examination.

The research involved 56 subjects (28 women and 28 men) aged from 21 to 61. All participants had secondary or higher education.

Results

Results of the assessments made on the seven-point scale are presented in the tables below.

ASSESSMENT OF GENERAL DISTRESS CAUSED BY THE POLYGRAPH EXAMINATION						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	7
response breakdown (in numbers and %)						
23 (41.1%)	**11 (19.6%)**	**11 (19.6%)**	**3 (5.4%)**	**6 (10.7%)**	**2 (3.6%)**	**0 (0%)**
descriptive statistics						
mean: 2.36; standard deviation: 1.51; mode: 1						

ASSESSMENT OF FEELING OF BEING TREATED LIKE AN OBJECT DURING THE POLYGRAPH EXAMINATION						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	7
response breakdown (in numbers and %)						
34 (60.7%)	**11 (19.6%)**	7 (12.5%)	**3 (5.4%)**	**0 (0%)**	**1 (1.8%)**	**0 (0%)**
descriptive statistics						
mean: 1.70; standard deviation: 1.08; mode: 1						

ASSESSMENT OF DISCOMFORT CAUSED BY REMAINING MOTIONLESS DURING THE POLYGRAPH EXAMINATION						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	**7**
response breakdown (in numbers and %)						
32 (57.1%)	**9 (16.1%)**	**6 (10.7%)**	**7 (12.5%)**	**2 (3.6%)**	**0 (0%)**	**0 (0%)**
descriptive statistics						
mean: 1.89; standard deviation: 1.23; mode: 1						

ASSESSMENT OF DISCOMFORT CAUSED BY THE BLOOD PRESSURE CUFF						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	**7**
response breakdown (in numbers and %)						
14 (25%)	**15 (26.8%)**	**7 (12.5%)**	**2 (3.6%)**	**10 (17.9%)**	**4 (7.1%)**	**4 (7.1%)**
descriptive statistics						
mean: 3.12; standard deviation: 1.96; mode: 2						

ASSESSMENT OF DISCOMFORT CAUSED BY THE RUBBER TUBES OF THE PNEUMO SENSOR						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	**7**
response breakdown (in numbers and %)						
36 (64,3%)	**13 (23,2%)**	**4 (7,1%)**	**1 (1,8%)**	**1 (1,8%)**	**0 (0%)**	**1 (1,8%)**
descriptive statistics						
mean: 1.61; standard deviation: 1.12; mode: 1						

ASSESSMENT OF DISCOMFORT CAUSED BY THE GSR SENSORS						
severity scale (7-point)						
1	**2**	**3**	**4**	**5**	**6**	**7**
response breakdown (in numbers and %)						
32 (57.1%)	**9 (16.1%)**	**6 (10.7%)**	**7 (3.6%)**	**2 (10.7%)**	**0 (0%)**	**0 (0%)**
descriptive statistics						
mean: 1.29; standard deviation: 0.71; mode: 1						

The tables below present the results of the assessments made on the five-point scale.

Comparison of distress in polygraph and medical examination procedures using technical equipment				
"Comparing the distress in polygraph examination and the distress in being examined with medical equipment, I believe the polygraph examination to be…"				
much less uncomfortable	**less uncomfortable**	**equally uncomfortable**	**more uncomfortable**	**much more uncomfortable**
response breakdown (in numbers and %)				
18 (36%)	**18 (36%)**	**12 (24%)**	**2 (4%)**	**0 (0%)**
N:50				

Comparison of the feeling of being treated like an object during polygraph and medical examinations				
"Comparing the feeling of being treated like an object during polygraph and medical examinations with technical equipment, I believe the polygraph examination to be…"				
much less uncomfortable	**less uncomfortable**	**equally uncomfortable**	**more uncomfortable**	**much more uncomfortable**
response breakdown (in numbers and %)				
15 (30%)	**14 (28%)**	**18 (36%)**	**3 (6%)**	**0 (0%)**
N:50				

Student's t-test was used to determine if responses from men and women differed significantly. No statistically significant differences were observed between the subject's gender and the estimation of distress caused by polygraph examination.

mean	standard deviation	standard error of mean	95% confidence interval		t	df	significance level
0.82	1.71	0.23	0.36436	1.28	3.602	55	0.01

No statistically significant correlations between interpersonal styles and the total distress in polygraph examination were observed. Pearson coefficient r was used to determine if the total level of distress caused by polygraph examination and the interpersonal styles are significantly correlated. The results obtained did not allow to reject the zero hypothesis on lack of correlation between the analysed variables.

The ISS scale	Pearson coefficient r	Significance level
I	–0.088	0.519
II	0.203	0.133
III	0.640	0.641
IV	0.303	0.023
V	0.054	0.692
VI	–0.159	0.241
VII	–0.083	0.544
VIII	–0.147	0.278

Discussion

Analysing examinee responses to particular subscales in detail, it is easy notice that polygraph examination is not considered highly uncomfortable (1 was the most frequent choice in 5 out of 6 subscales). Distribution of the remaining responses substantiates that the same situation is perceived and assessed through individual traits. Such choices, however, are not correlated with personality traits operationalised with Stanik's ISS scale. Therefore a similar analysis of other psychological features (operationalised by means of other questionnaires) may be worthwhile. The subject's gender is not a distinguishing factor either.

The arithmetic mean does not exceed 2 in 4 out of 6 subscales, and exceeds 3 in only one scale describing the discomfort caused by the blood pressure cuff. The result confirms the statement about the combination of physical discomfort and psychological distress. The physical discomfort caused by the cuff has been emphasised in special-

ist literature (Leśniak: 1997). For this reason the duration of the question series is limited; a problem that has not been solved in modern polygraphs, despite reducing recommended pressure and introducing technological innovations. It may be a fact worth noting that the same cuffs are used by medical practitioners, and 90% of examinees believe the polygraph examination to be less or equally stressful as a medical examination with the use of technical devices.

The results of the present research support the claim that the potential distress in polygraph examinations should on no account provide grounds for objections against polygraph examinations.

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Polygraph Examinations of Civil Servants in Poland

Полиграфное тестирование служащих силовых ведомств в Польше

Key words: Polygraph examination in Poland, Pre-employment examination, Screening, Polygraph in law enforcement, Polygraph in intelligence and counterintelligence

The first fairly credible description of a polygraph (lie detector) and the principles of its operation is found in Kryminalistyka, a course book written by Paweł Horoszowski and dating from 1958 (Horoszowski 1958). The description is accompanied by the statement that "a lie detector is practically nothing more than a device contributing to the intensification of the atmosphere of intimidation surrounding the interrogated individual" (Horoszowski 1958).

While visiting the US on a Ford Foundation scholarship in 1963, Professor Horoszowski purchased a three-channel Stoelting polygraph, brought it to Poland, and performed two examinations for the purpose of gathering evidence in criminal cases,

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and without any preparation or trial runs. He performed the first of these examinations in June 1963 in a homicide case conducted by the Regional Prosecutor's Office in Olsztyn (case II Ds. 25/63).

The literature includes a description of the two examinations and an analysis of the errors committed while carrying them out (Widacki 1981; Widacki 2014). What, however, remains true is that a polygraph examination was performed for the first time in Poland as evidence in an investigation conducted in 1963. Moreover, the two cases where polygraph examinations were used as evidence initiated a debate in legal and forensic science circles, and also resulted in the Supreme Court issuing an opinion on the matter. The Supreme Court ruling of 11 November 1964 (III K 177/64) was rather ambiguous and has been the subject of various interpretations. Nonetheless, firstly it was a ruling of the Supreme Court on polygraph examinations, and secondly, it did not expressly ban the use of such a method as a proof in criminal proceedings.

Late in the 1960s a polygraph (Keeler polygraph, model 6308) was purchased by the Military Intelligence Services (Wojskowa Służba Wewnętrzna, WSW), a body that combined the functions of military police and military counterintelligence. A little later, another polygraph was purchased by the Ministry of the Interior, within whose structures both Civil Intelligence (Department I) and Counterintelligence (Department II) functioned.

In both these institutions, polygraphs were primarily employed in the training of officers. Intelligence agents were probably also made familiar with such procedures, on the assumption that they might in the future be subjected to such examinations by American security services. The WSW used the polygraph in criminal cases and investigations conducted by military prosecutors, especially those concerning the theft of firearms.

WSW experts were also appointed by the offices of general (i.e. non-military) prosecutors to conduct polygraph examinations in the most serious criminal cases, including primarily murder and manslaughter.

Beginning in the mid1970s, polygraph examinations – originally in experimental form (Widacki 1977), but later also applied in criminal cases – were performed in the Department of Criminology at the Jagiellonian University in Kraków, later moved to the Department of Criminology of the University of Silesia in Katowice. From 1977 to 1989, a few hundred examinations for criminal cases were conducted at the Department of Criminology at the University of Silesia. What is more, over 800 of people were tested in this way with the aim of eliminating suspects during an

investigation to find the perpetrator of a series of sexually-motivated murders. Polygraph examinations were also conducted, albeit on a lesser scale, in the Department of Criminology at the Nicolas Copernicus University (UMK) in Toruń (Widacki 2014). The departments at the Jagiellonian University and later at the University of Silesia carried out plenty of trials and maintained contacts with overseas academic institutions (notably the University of Utah, Michigan State University, and the Charles University in Prague), which among other things resulted in a number of joint publications (Widacki, Horvath 1978; Dufek, Valkowa, Widacki 1975; Dufek, Widacki, Valkowa 1975; Widacki, Romig 1975).

Until 1989, the Polish police force (Milicja Obywatelska, literally "civil militia") had no polygraph examination unit at its disposal, and therefore had to make use of WSW and academic experts.
At this time no polygraph-based screening was performed during recruitment procedures for the country's police and special forces.

More radical changes only occurred with the systemic transformations that followed the fall of communism in 1989.

The change in the political system, independence from the USSR, reforms of the special and police forces, and the establishment of open cooperation with Western states in different areas, notably with the United States, made it possible for Poland to use polygraph examinations on a more extensive scale and based on Western standards.

The Milicja Obywatelska was replaced at this time by the Police Force, which soon purchased its first polygraph devices and organised a central hub for polygraph testing in Warsaw and four field centres. Similarly, the Office for State Protection (Urząd Ochrony Państwa, UOP), founded in 1990, launched its own polygraph testing unit. Such units were also set up by the Border Guard (Straż Graniczna), the Military Police (Żandarmeria Wojskowa), and the Military Information Services (Wojskowe Służby Informacyjne, WSI). The qualification procedure for candidates for positions in the UOP that require special skills and/or predispositions could be augmented with psychophysiological tests. The regulations of the Minister of National Defence (Regulation of the Minister of National Defence 2004) concerning the Military Information Service stipulate that examinations of candidates for positions that require special skills and/or predispositions be conducted by psychologists who assist or are employed in WSI structures.

The special services were soon reorganised. On 29 June 2002, the UOP, responsible for civilian matters, was divided into the Internal Security Agency (Agencja

Bezpieczeństwa Wewnętrznego, ABW) and the Intelligence Agency (AW), as stipulated in the Internal Security Agency and Intelligence Agency Act (Internal Security Agency and Intelligence Agency Act, 2002). The Central Anticorruption Bureau (Centralne Biuro Antykorupcyjne, CBA) was set up in 2006 (Central Anticorruption Bureau Act 2006). In the same year, the Military Information Service was replaced by the Military Counterintelligence Service (Służba Kontrwywiadu Wojskowego, SKW) and the Military Intelligence Service (Służba Wywiadu Wojskowego, SWW) (Military Counterintelligence Service and Military Intelligence Service Act 2006).

All police and special services have at their disposal their own polygraph testing units. They all provide examinations for internal purposes, both in their investigations and operations.

Moreover, polygraph testing is used for pre-employment and screening procedures in most police and special forces. The recruitment procedures for individual services are specified by statute and stipulate that polygraph examinations are mandatory for all candidates. They are also used to test the loyalty of officers and employees and ensure the latter are keeping state and industrial secrets. The number of polygraph examinations conducted internally by police and special forces remains unknown, but is estimated to be many times more than in the case of examinations performed in criminal cases.

The admissibility of polygraph examinations in the case of candidates for positions in the Police Force, the Internal Security Agency, the Intelligence Agency, the Central Anticorruption Bureau, the Border Guard, and the Military Police is regulated by the appropriate legislative acts, while in the case of candidates for the Military Counterintelligence Service and Military Intelligence Service as well as for the Customs Services, the use of psychophysiological tests in recruitment procedures is determined by the appropriate regulations (Widacki 2014).
Candidates for the following services are required to undergo polygraph pre-employment examinations:

1. **The Police** – the rules and regulations governing the psychophysiological testing of candidates are set out in the Police Act of 6 April 1990 (Journal of Laws 2015, 355, consolidated text) and the Regulation of the Minister of Internal Affairs and Administration of 20 March 2007 regarding the methods and conditions for ascertaining the physical and psychological fitness of police officers to serve in specific positions and specific organisational units of the Polish Police (Journal of Laws of 10 April 2007).
2. **Central Anticorruption Bureau** – polygraph examinations for candidates and officers are regulated by the Central Anticorruption Bureau Act of 9 June 2006

and the Regulation of the President of the Council of Ministers of 20 July 2006 regarding the standard personal questionnaire and the detailed method for conducting recruitment procedures for candidates applying to serve in the Central Anticorruption Bureau. Art. 50 of the Act stipulates that "in the case of candidates applying to the Central Anticorruption Bureau for positions that require special skills and/or predispositions, the qualification procedure may be augmented with activities aimed at testing the candidate's fitness to serve in such a position, including the conducting of a polygraph examination", and Art. 63, section 2 of the Act concerns polygraph testing of Central Anticorruption Bureau officers authorised *ex officio* by the head of the Central Anticorruption Bureau and not requiring any further justification. Such decisions are based on internal reporting rules, and are therefore not subjected to any control.

3. **Customs Services** – the Customs Services Act (Journal of Laws of 2009, No. 168, item 1323) and the Regulation of the President of the Council of Ministers – conducting physical fitness tests, psychological tests, and psychophysiological tests on customs officers (Journal of Laws of 2010, No. 230, item 1515) stipulates that both candidates and officers might have to undergo a polygraph examination to determine their fitness to serve in a given position (article 102).
4. **Internal Security Agency** and
5. **Intelligence Agency** – polygraph examinations for Internal Security Agency and Intelligence Agency candidates are regulated by the provisions of the Internal Security Agency and Intelligence Agency Act of 24 May 2002 (consolidated text: Journal of Laws of 2010, No. 29, item 154) and relevant regulations: Regulation of the President of the Council of Ministers of 29 November 2002 concerning the personal questionnaire model and the specific rules and methodology for conducting qualification procedures for candidates for the Internal Security Agency, as well as the Regulation of the President of the Council of Ministers of 24 April 2003 concerning the standards for the personal questionnaire and the detailed rules and methodology for conducting qualification procedures for candidates for the Intelligence Agency service.

In this case, a polygraph examination is part of the qualification procedure, and it is aimed at ascertaining the physical and psychological fitness of a candidate, as well as whether a candidate is fit to serve in a position that requires special skills and/or predispositions.

6. **Border Guard** – Article 31 of the Border Guard Act of 12 October 1990 (Journal of Laws of 2014, 1402, consolidated text) defines psychophysiological tests as part of the qualification procedure, while an Regulation specifies that a polygraph examination forms part of the first stage of the procedure and is conducted by an organisational unit from the Border Guard Headquarters responsible for personnel matters. Should the 12-month validity period of a polygraph examination

expire, the candidate is required to undergo another examination.

7. **Military Police** – Article 9, section 1a of the Military Police and Military Enforcement Authorities Act of 24 August 2001 stipulates that a candidate for the Military Police may be asked to undergo a psychophysiological test.
8. **Military Intelligence Services** and
9. **Military Counterintelligence Services**

The Military Counterintelligence Service and Military Intelligence Service Act of 9 June 2006 and the following regulations: Regulation of the Minister of National Defence of 26 July 2006 concerning the qualification procedure for soldiers applying for positions in the Military Intelligence Services, and the Regulation of the Minister of National Defence of 26 July 2006 regarding the qualification procedure for soldiers applying for positions in the Military Counterintelligence Services. A candidate applying for the Military Counterintelligence Services or Military Intelligence Service posts that require special skills or predispositions may be required to undergo psychophysiological tests at the request of the Head of the Military Counterintelligence Services or Head of the Military Intelligence Service, respectively.

During the recruitment process for the police force polygraph examinations are utilised to determine the predispositions of individual officers for specific positions and/or in specific organisational units, in particular their loyalty to the force and whether they have derived any undue benefits from their service up to that point, as well as to identify any pathologies or undesirable addictive tendencies.

Psychophysiological testing of candidates for positions in the police force consists of five stages:

1) filling in a personal questionnaire
2) detailed preparation for the examination
3) carrying out the tests: preliminary test, stimulation test, and the test proper
4) analysis of the results obtained in the examination
5) drafting the final opinion based on the examination.

Video and audio recordings are made of the course of the examination.

No questions regarding religion or the candidate's sexual and political preferences are asked during a polygraph examination. The examination is recorded (both image and sound). If the result of the examination is inconclusive, it can be repeated, yet only once within 30 days (Regulation of the Minister of Internal Affairs and Administration 2007).

The admissibility of polygraph testing both of candidates to the police force and of already serving officers has been reviewed by the Constitutional Court (Ruling of the Constitutional Court 2010) which ruled that the provisions of the Statute that allow such testing to be performed were not in violation of the Constitution.

Pre-employment examinations test the fitness of a given officer to serve in a given position or in a specific organisational unit, and rule out candidates who for specific and undisclosed reasons should be disqualified from joining the force or holding specific posts.

The main goal of follow-up tests is to assess whether officers have disclosed any state or business secrets since the previous examination, whether they might have made undesirable contacts, committed crimes, etc.

Only in the case of the Government Protection Bureau (Biuro Ochrony Rządu, BOR) are there no legal regulations introducing mandatory polygraph examinations for candidates and officers.

It is evident that while polygraph testing of candidates and officers are enshrined in legal regulations, no other state officials or civil servants for whom no polygraph testing is provided under the law can be required to undergo such an examination. Therefore, extending the scope of the procedure to other categories of officers and/or civil servants would require amending such Acts so as to introduce such a requirement.

Police and special forces may conduct operational and reconnaissance intelligence, and can perform polygraph examinations regarding confidential and secret personal sources of information, and also verify the veracity and loyalty of such sources.

The case is different when polygraph examinations used in the private sector, whether by detective agencies or for the pre-employment and screening of staff. As far as the use of polygraph examinations in private sector recruitment is concerned, they must be considered legally permissible, in accordance with the principle that private entities are permitted to do anything that is not legally prohibited, unlike in the case of state bodies, which are only allowed to do what a legislative act permits or instructs. There is no act of law that forbids polygraph testing of the employees of other than state companies, Nonetheless, such a procedure cannot exceed the scope of information that the employer is legally entitled to know (Cempura, Widacki 2012). This cannot include so-called "sensitive data", such as sexual preferences, political views, information concerning the candidate's private life, etc.

Polygraph examinations are also permitted in disciplinary procedures involving prosecutors. In Chapter 3 regarding the criminal, disciplinary, and official/business responsibility of persecutors/prosecutors (Prosecutor's Office Law 2016), the provisions of the Prosecutor's Office Law Act stipulate that a disciplinary officer may during the course of a disciplinary hearing, with the aim of narrowing down the number of people suspected of having committed a disciplinary offence involving the dis-

closure of information covered by criminal procedure, appoint an expert to employ certain technical means to monitor and examine the involuntary body reactions of a prosecutor granted access to such information, with the prosecutor's consent (art. 154 of the Law on Prosecution Act 2016).

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Practicum

The CQT "How To" & "Why To"

by Tuvya T. Amsel*

This article frequently uses the terms: "How to Do" or "How to" and "Why to Do" or "Why to" in order to avoid misinterpretation their definitions follows:
"How to Do" addresses the practical aspects of a polygraph examination i.e. in what way or manner the examiner should perform the test.
"Why to Do" is the rationale or theory behind the practical aspect (the "How to"),i.e. the reasoning why the examiner is required to perform in a particular manner.

Most polygraph training students at basic level are eager to start practicing the profession as soon as they graduate; after all they took the training to become field examiners. As a result of this natural enthusiasm, the massive training material condensed into a relatively short period of time and the need to acquire new proficiencies, most students pay more attention during the training to the practical aspects of the profession i.e. to the "How to" rather than to the theoretical aspects of the profession i.e. the "Why to". The main concern of most students is to master the "how to", which is why less attention is paid to the "why to". Without a proper internship period the

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"why to" will be stored away in their training material rather than their memory. As time passes the examiner becomes a skilled operator, a technician that follows to the dot the "how to" checklist to the point of being able to perform blindfolded, with one hand tied. Eventually practice turns into routine until the day when a non-textbook examinee or an unusual test scope is required. At this point the examiner realises that the ready-made "one size fits all" dress ("prêt à porter"), that s/he practices daily, does not really fit everyone, and the time for a "custom tailored" test comes knocking to door of the examination room, compelling the examiner to consult her/his training material in quest for the "why to" that may direct her/him to the "how to".

Emotions

From the early days of polygraph, it has been recognised that lying per se does not produce any psychophysiological changes but rather the emotions that accompany the lie.[1] Emotions are a person's subjective reaction to a certain stimulus. The reaction carries a cognitive awareness followed by psychophysiological changes and verbal and nonverbal behaviour changes.[2] The fear of detection and the consequences followed are considered to be *the* main emotional contributor to the psychophysiological chain of responses detected by the polygraph, there are several other emotion-related plausible theories that explain the responses.[3] Regardless of the controversy as of which emotion is the trigger to the responses detected by the polygraph it is mandatory that the RQ and CQ must elicit emotions, otherwise they will not be sufficiently stimulating, resulting in minimal if any psychophysiological response that may eventually lead to a false positive conclusion. If the examinee lies because s/he was instructed to as in DLCQ, yet s/he is indifferent to that lie, minimal responses may result. The same minimal or zero response may occur if the examinee chooses to answer the PLCQ in the wake of a cognitive decision that her/his answer is the right one from point of view of social desirability rather than providing an emotion provoking answer i.e. one in which the examinee fears detection.

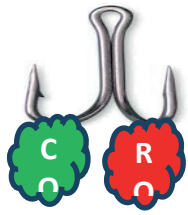
The CQT "Why to"

We have all experienced situations where a psychological stimulus triggers physical changes in our body e.g. when we are embarrassed we tend to blush, and when we get scared we turn pale. Lying is not any different. Yet the problem is that physical changes that we experience when lying, such as increase in heart beat rate or blood pressure volume, are not exclusive to lying and occur in other circumstances, e.g. fear. So far scientists have not found any unique physical response exclusive to ly-

ing, unless one counts Pinocchio's nose. Naturally, the fact that lying lacks exclusive physical responses raises the question of how do we know that the physical responses detected and recorded by the polygraph can only be attributed to lying? The solution is in the questioning techniques that can determine with high statistical probability that the physical responses monitored and recorded by the polygraph during the test can be attributed to lying. Currently there are two validated questioning techniques recognised by the APA: the Recognition Test and the Comparison Question Technique (CQT).

CQT History – the genealogy of the comparison question (CQ) starts in 1939 with its ancient forefather, the "emotional standard": a term coined by Rev. Walter Summers in his research into lie detection. The emotional standard was an emotion-provoking question to which the examinee answers truthfully, but one that the examinee would prefer to hide. It was included in a test series so the reaction it evoked could be compared with the reaction elicited by relevant questions.[4] The next generation of CQT arrived in 1947 when John Reid introduced the "comparative response question" (later called the "control question" and nowadays the "comparison question"): "a question about an act of wrongdoing of the same general nature of the main incident under investigation, and one to which the subject, in all probability, will lie or to which his answer will be of dubious validity in his own mind. (…) the control question should be as broad as possible in space of time, or in scope of endeavor". [5] The responses to the CQ are later compared to RQ responses in order to determine which of the two extracted the stronger physical response, a response that actually indicates and represents which one of these questions (the RQ or the CQ) had the strongest psychological stimulation effect on the examinee. Or in Reid's words: "If the subject is telling the truth about the matter under investigation, his lie to the control question, or his concern about the accuracy of his answer, will ordinarily produce a response on his chart greater than any response that may appear when he says 'no' to the question about the main incident. With a lying subject, however, his concern will be much greater about the main incident that about the relatively minor issue presented in the control issue. In fact the control question lie, or probable invalidity of the answer, will ordinarily be of no concern to him at all. His recorded response, therefore, should be much more intense when asked about the main incident."[6]

Unlike a different type of recognition tests such as the POT and CIT, which attempt to determine if the examinee possess any knowledge only known to the perpetrator, the theory behind the CQT can be described graphically as a double hook bait, where the RQ is the bait on one arm and the CQ is on the other.

The examinee is attracted to the most appealing bait, whether the RQ or the CQ, i.e. the question that poses the biggest threat to her/him. Whether the examiner uses a directed lie comparison question (DLCQ) or the probable lie comparison question (PLCQ), the bait should be sufficiently attractive to the innocent examinee, otherwise her/his attention will focus on the relevant question bait only.	

The rationale behind the CQ is a result of the logical assumption that the RQ poses a threat to any examinee, whether innocent or guilty. In order to differentiate between the innocent examinee and a guilty one, the CQ that is assumed to be a probable lie will elicit stronger physiological responses than the RQ from the innocent. So actually the CQ acts as a safeguard that protects the innocent allowing her/him to demonstrate that s/he is less concerned with the RQ than with the CQ, which leads to the conclusion that s/he is truthful.

Which CQ is the most effective?

There are two main types of CQ: "directed lie (DLC) and probable lie (PLC). Subtypes for the DLC are the trivial and the personal. For the PLC they are the exclusive (exclusionary), and non-exclusive (inclusive)".[7] Which of them is more effective, the DLC or the PLC? And which PLC is more effective the exclusive or the non-exclusive? According to Krapohl & Shaw (2015), "the available evidence indicates that explicit separators between relevant and comparison questions are not necessary so long as the PLC is broad (…) so long as the PLCs are not explicitly relevant, current evidence indicates no-exclusionary PLC can be at least equally effective."[8] Following this line the APA Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques[9] recognised various test formats that are using different types of CQ. This indicates that all the types are as effective as the other as long as the question effectively elicits emotions. What triggers the emotions is not the phrasing but rather the reason why the examiner explains the importance of the CQ. A pilot study conducted by Ginton[10] demonstrates the validity of this claim. In this pilot study the examiner told the examinee that during the test he will be asked a question with utmost importance to determine the examinee's truthfulness and the question is: "Does the colour blue bear any significance to you?" The results showed that this question elicited almost identical responses as any other CQ.

It should be emphasised that regardless of the fact that there is no difference in the effectiveness of the different CQ types the CQ *must be* adopted to the examinee's

world of values as expressed by her/him in the pretest CQ discussion. In addition, if only possible, the examiner should extract even a minor admission to wrongdoing from the examinee, because any CQ that contains an element of admission or confession (Other than what you told me (…) or except the specific incident that you mention…) is more effective since it focuses the examinee's memory on similar additional incidents along with raising internal doubt which in return elicits stronger responses.

A word of caution: "Comparison questions that are too weak or too strong can affect the numerical scores, and consequently the ability to arrive at a definitive and accurate decision. Comparison questions (…) must not be 'too hot' or 'too cold', but 'just right'. They must be carefully chosen and introduced to the examinee to achieve high accuracy. Shortcuts in PLC development and execution may lead to decrements in accuracy."[11]

A case study

The following real life case demonstrates the necessity of the "why to": an electrical transformer was stolen from a plant yard during the night shift. The modus operandi suggested an inside job. Ten night shift employees underwent a polygraph test. One of them was found deceptive. His relevant and comparison questions were:

- Between the ages of 35 and 40, have you done something illegal?
- Have you stolen the transformer?
- Between the ages of 35 and 40, have you taken anything from a workplace without permission?
- Have you taken that missing transformer out of the plant?
- Between the ages of 35 and 40, have you disobeyed your workplace regulations?

The employee, a 50-year-old father of five, an ultra-orthodox religious man who had worked for the company for 25 years denied the allegations and demanded to be re tested. Known to be a very honest person, he was given a second chance by the chief of security, who doubted the result. The employee passed the re-rest successfully. During the retest the examiner, who internalised the "why to", focused the CQs pretest discussion on the examinee's moral disposition rather than the examinee's factual behaviour. In legal terms, the emphasis of the discussion was the *mens rea* (the mental/emotional state of the perpetrator's mind) rather than the *actus reus* (the physical/actual element of the crime). By doing so the CQs became more meaningful eliciting stronger emotions since the mental element is directly related to the perpetrator's moral values and uprising which are derived and rooted in religious commands that,

at least on the outside, are a part of the examinee's image and self-esteem. This CQs pretest discussion resulted in "custom tailored" rather than the "one size fits all" CQs. They are presented below (the RQs remind the same):

- In your personal life have you behaved in an unreligious manner?
- In your personal life have you breached your religious upraising or duties?
- In your personal life have you acted in a morally shameful manner?

Whether the change of the CQs was the sole reason behind the result, we will never know but no doubt the CQs were by far more emotion provoking in the retest than in the initial test.

"There is nothing more unequal than the equal treatment of unequal people"
Thomas Jefferson

Recently we witness a growing tendency of turning everything into manuals. Books such as *How To…*, *…for Dummies*, and similar suggest remedies to all aspects of life. While believing in the necessity of protocols and checklists, the downside of such "manualisation" is that following a protocol rigorously may turn a polygraph examiner into a technician, i.e. a manufacturer of "one size fits all" solutions who has mastered the "how to", rather than a tailor of personalised solutions, who – besides mastering the "how to" – has internalised the 'why to". The variety of examinee personality types, education, gender, ethnicity, age, social status, etc. along with the various types of tests copes move the examiners out of their "how to" comfort zone. Examiners should constantly consider the "why to" in order to "custom tailor" each and every test to the examinee rather than fit the examinee to the test.

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Literature review

Look from the West...

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Ginton A. *Examining Different Types of Comparison Questions in a Field Study of CQT Polygraph Technique: Theoretical and Practical Implications, Journal of Investigative Psychology and Offender Profiling*, 2017

Since 1947 when the comparison question was first integrated by John Reid into the test format it became the key target of anti-polygraph criticisers. Not surprisingly, the Comparison (control) Question Techniques also happens to be the test technique *most frequently* used by polygraph examiners. Reid's Probable Lie Control Question (PLCQ), later labelled as the Non Exclusive Control Question (NECQ) was later changed by Backster into the Exclusive Control Question (ECQ). While the debate which CQ–NECQ or ECQ – is better underway, Raskin introduced the Directed Lie Control Question (DLCQ) in the 1980s. Since then more CQ-related ideas have been developed.

Many field examiners feel that what makes the question effective and responsive regardless of the format, whether it is a DLCQ or a PLCQ, is the manner in which the comparison question is introduced to the examinee in the pretest, and Ginton's latest research supports this notion.

To start with, the research format is highly unique, it was integrated into real life in an examination of ongoing arson cases that in an Air Force base for over a year. During the investigation period over 300 alleged suspects were polygraphed. Out of this number, a group of 21 examinees were given a unique test format. They were faced with a traditional three relevant CQT test formats to include a primary involvement relevant question: "Did you, in person, set fire to one or more warehouses in the base?" a secondary involvement question: "Were you involved in setting fire to one or more warehouses in the base?"and a knowledge question: "Do you know for sure who set fire to one or more warehouses in the base?". Adjacent to these relevant questions were three different comparison type questions: one regular probable lie question: "Have you ever damaged any public property?" A hypothetical question: "Assuming you have very good reasons and opportunity, would you damage any public property out of rage or for pure fun?" And a bizarre question: "Do you like blue in particular?" The bizarre colour question was introduced to the examinee in the following manner (quoted from the research):

> *Look Ron, I am about to ask you a question that might look a kind of bizarre to you. But believe me, it is a very important question, otherwise I would not waste my time asking it. So, think very carefully before you answer me,—Do you like the color of blue in particular?"*
> *Now, regardless of the examinee's answer, the interview went on to discuss the "blue" issue for another few minutes, relating to his or her habits and personality traits, and by so doing increased the salience of this question.*
> *In case the examinee answered that blue is his favorite color the examiner asked him whether he considered his attraction to blue to be abnormal or pathological in its nature.*
> *The final phrasing of the question was in accordance with this conversation, aiming to get a no answer. Thus, either it was "Do you like the color of blue in particular?" or "Do you consider your attraction to blue to be extremely abnormal?" and eventually, the answer chosen by the examinees was always "no".*

As defined by Ginton the "study aimed to compare the three kinds of comparison questions to see whether there are any differences between them with regards to the strength of physiological reactions that they induced in the examinees". So in every repetition the physiological responses of the three different types of comparison questions were compared to each other and a rank order of the reactions' relative strength was established by an overall clinical judgment. The question judged as producing the strongest reactions, received 1 point, the second – 2 points, and the weakest being in the third position received 3 points. All the charts were judged by three examiners separately. Later the number of points assigned by the judges to each

question was totalled. The probable lie comparison question received a mean total of 1.94, the hypothetical comparison question – 2.14 and the bizarre comparison question 1.91, i.e. results that are remote from being statistically significant.

Ginton's research conclusion suggests that:

> at least with truthful examinees, comparison questions, which do not incorporate any lies to be afraid of their exposure, or any lies at all, might function similarly to probable lie questions, by just increasing their salience in a manner that presumably creates some concerns about them.

The fact that the examinees' responses to three different comparison questions are similar led to the conclusion that Backster's "psychological set" concept that the innocent examinee's fear of detection assumingly causes the responses to the comparison question has no merit. Naturally Backster's supporters will disagree with this claim due to the fact that the comparison question was non-exclusive, a feature whose relevance was rejected in several studies.

Tuvya T. Amsel

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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.

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