



Barbara Leśniak, Marek Leśniak\*  
University of Silesia  
Poland

## 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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\* marek.lesniak@us.edu.pl

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.<sup>1</sup> 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).

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<sup>1</sup> An example of such website is [www.polygraphia.ca/questions\\_polygraph\\_examination.html#3](http://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 (Róžańska-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.

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

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

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

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

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

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

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

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

<b>Comparison of the feeling of being treated like an object during polygraph and medical examinations</b>				
“Comparing the feeling of being treated like an object during polygraph and medical examinations with technical equipment, I believe the polygraph examination to be...”				
<b>much less uncomfortable</b>	<b>less uncomfortable</b>	<b>equally uncomfortable</b>	<b>more uncomfortable</b>	<b>much more uncomfortable</b>
response breakdown (in numbers and %)				
<b>15</b> (30%)	<b>14</b> (28%)	<b>18</b> (36%)	<b>3</b> (6%)	<b>0</b> (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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