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## The Problems of Truth Perception during Psychophysiological Examination

The topic of lies is discussed in the works of Paul Ekman (1992) and Aldert Vrij (2000). The specific case of the Russian nation is described by V. Znakov. Unfortunately, the problem of truth during psychophysiological examination has been researched by very few scholars. The majority of authors refer to validity and accuracy. No discussion has taken place about how such truth (the facts) is established during psychophysiological examination.

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First of all, we should recall that all the tests used for psychophysiological examinations can be divided into two groups. The first group, i.e. the group of comparative questions, is the most popular one among polygraphists. Comparative questions are such questions which are not related to the problem researched by plot, i.e. which are irrelevant. Through such psychophysiological examination those people who took part in the crime under investigation are distinguished from those who did not (Varlamov et al. 2008). According to the classical technique of psychophysiological testing such an examination should be followed by a post-test interview (Abrams, 1989; Matte, 1997), which aims at making the examined persons (those who were noticed as having stronger psychophysiological reactions to the relevant questions in comparison to the comparative ones during psychophysiological examination with the application of the polygraph) confess to having committed the crime. So far we do not see any direct problem of truth.

The second test group may include all the tests which help to verify and establish the circumstances of a given crime. This group includes POT, GKT, CIT and EKT. So the question is what is established when applying these tests. We will present several examples from the specific psychophysiological examination with the application of a polygraph.

Several years ago the Russian polygraphist Irina Nikolajeva applied a polygraph test when examining a person who was suspected of having murdered his wife. Nikolajeva used the modified GKT. The recorded psychophysiological reactions of the person allowed the assumption to be made that the person was completely familiar with the circumstances of the crime. However, there were no strong (marked) psychophysiological reactions to the question whether he had killed his wife.

At first Nikolajeva did not understand the reason for this discrepancy. Later it emerged that according to the examinee's understanding and belief he did not kill, but "punished" his wife.

The following example is different. A large amount of copper tubes was stolen in a company. The investigators (detectives) established four potential or possible suspects. All suspects agreed to take a psychophysiological examination with the application of a polygraph. During the psychophysiological examination using the polygraph EKT was used. Having conducted the psychophysiological examination with the application of the polygraph it was established that two of the suspects had not participated in the crime. Taking into consid-

eration the results of the examination the assumption could have been made that the other two suspects were well-informed or knew how the copper tubes had been stolen. One question was aimed at finding out what sum of money the criminal had received when selling the tubes. Having conducted the psychophysiological examination of the other two suspects with the application of the polygraph the results gained revealed inadequacies in the amount of sums, as the psychophysiological reaction of the examinees to different sums of money differed. The question might have arisen whether this was a mistake; however, this was not the case. One of the suspects, i.e. the organizer, told his accomplice the sum which they had received for the copper; this sum was, however, smaller than the real one.

The Codes of Criminal Procedure of the Republic of Bulgaria and of the Republic of Lithuania similarly define that the court, the prosecutor's office and subjects of the pre-trial investigation have to establish the objective truth using all possible legal and legislative measures. This implies that the investigators and prosecutors who investigate crimes and polygraphists who participate in criminal proceedings have to approach real events, to define the accident, to restore the course of the accident, and to define the body of the crime using the maximum defined evidence and other data. This means that, when defining the objective truth, two principles clash and disagree. On the one hand there are principles of "objective" truth, and on the other there are principles of proven "subjective" truth (Gaidarov, 2007).

What is "objective" and "subjective" truth? The problem is that the circumstances of the crime are established via the subject, who one way or another participated in that crime. How accurately can the subject recall past events? At this point we are not talking about a purposeful lie or reticence. There might be "facts", which are "proven", but in reality they did not occur in the past or they were different.

In classic criminology textbooks (Kertes, 1964) we may find examples of cases when wrong perception evokes mistakes. When asked how a prisoner had escaped, the warder explained that during a walk the prisoner had attacked him with a knife. During the investigation it was established that the criminal was holding not a knife, but a herring.

It is known that one and the same thing may be perceived differently by different people. Even the same person under different conditions may evaluate the same thing differently. This fact should be taken into consideration when interpreting the evidence of witnesses. Two witnesses' testimony regarding the accident often vary due to a different attitude towards the accident.

Research conducted by psychologists, psychiatrists and other physicians (Kavalielis et al., 2009) show that the situations described above, in which the eyewitnesses could not reconstruct the facts, happened due to three reasons:

Firstly, the things perceived by victims and by quite a few witnesses during the commitment of the crime may raise more or less negative emotions. For the sake of self-preservation the human psyche blocks information which raises negative emotions in the conscious memory. Therefore, many victims and eyewitnesses cannot recollect information which they have consciously perceived.

Secondly, witnesses (and sometimes victims) quite often take no notice of the things they have seen; therefore, the perceived facts do not stay in the memory as knowingly perceived and cannot be recollected and narrated.

Thirdly, sometimes the number of objects, features and actions related to the crime go beyond human perception. According to scientists, the number of objects that can be knowingly perceived is  $5 \pm 2$  objects; the surplus is stored outside the knowingly perceived part of the memory.

According to the acclaimed specialist in the field of NLP (neuro-linguistic programming) R. Dilts (1998), it can be claimed that when acquiring information a person may be subject to three possible processes: generalization, deletion and distortion.

Generalization is a cogitative operation and product, the form of reflection of general features and attributes of actual phenomena.

Deletion (filtration) is a process by which a person “sorts” information, taking into consideration which information is important and necessary to him and which is not.

Distortion is a mechanism which changes the perception of sensory data.

Let us sum up what internal and external factors influence a person’s ability to perceive the processes which take place around him/her, and to reproduce them from his/her memory.

1. Individualization of events. It is known that memories are constantly being “processed”. The information which is stored in memory is influenced by subjective perception, evaluation and fantasies. Therefore, there is no doubt that

the available information will be distorted. The least that may happen is deformation of initial information. This can be illustrated by the following example. Information about different events may be deformed, subjectively outlived and as a result merged into one event.

2. Physical state and abilities of an individual. An individual may be in such a state when, due to some functional or organic changes, his/her capabilities of accepting and perceiving information decrease or become limited. The point is that an individual may be tired, intoxicated with alcohol or narcotic substances, may be ill or may feel unwell, may fail to fully perceive a prompt action due to the particularity of the organism. Also the process of accepting and perceiving information may be aggravated by the poor eyesight and hearing of an individual.

3. Emotional state of an individual. The capabilities of an individual to accept information are limited (Varlamov et al., 2000; Mijovic, 2002). If there is too much information, mechanisms of self-preservation automatically come into action. This may cause partial or full blocking of information acceptance. For example, this may happen when an individual is in a state of stress or euphoria etc.

4. Particularity of an individual due to age. Preteens taking part in an investigation of a crime can be taken as an example. Forensic scientists in Bulgaria have drawn attention to the fact that it was noticed that preteens' evidence was very unreliable. Children constantly change their evidence, supplement evidence with information or forget details, confuse reality with fantasies. Analogical problems may arise when interviewing people of a considerable age.

5. Sex, profession and education of an individual. The best example illustrating this factor would be the following. Women are better at noticing and remembering the details of female clothes and accessories, whereas men are better at remembering vehicles, work tools, mathematicians at figures, and other specialists at details of a machine, materials etc.

6. External conditions of an event. It is important to take into consideration lighting and weather conditions during the event and the observation position of an individual during the action.

When a participant in a crime takes a psychophysiological test with the application of polygraph it is examined whether that participant is hiding some information. It often happens that during psychophysiological examination using a polygraph due to lack of expertise in this sphere clients/initiators hope that the examination will reveal the whole objective truth of the event. Unfortunately, during this type of examination it is only possible to verify the subjective information which an individual has acquired, retained and restored.

Due to the aforementioned objective and subjective reasons the results (or information) may not exactly coincide with the results of other specialists, examinations and other proceedings. The results of several individuals who have taken a psychophysiological examination with the application of a polygraph may also partly differ. Therefore, the investigators of crimes should analyze discrepancies and look for the reasons for those discrepancies.

Our experience working with EKT (Saldžiūnas and Kovalenko, 2008, 2009 ) shows that with the benefit of properly assessed remarks which were put forward in this work it is possible to receive reliable and predictable results. We would like to remind experienced polygraphists of well-known recommendations:

- to conduct polygraph test on persons who are at least 16 years old,
- if an individual has taken a psychophysiological examination with the application of a polygraph while under the strong influence of alcohol or other intoxicants, there is a small chance of receiving comprehensive results,
- to conduct the examination with the application of a polygraph as soon as possible after the crime is committed,
- in some cases to induce hypnosis in order to help to sharpen an individual's memory (Kavaleris et al., 2009).

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