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Complementary Use of Profiling and Polygraph Method in Slovenia During the Period 1997-2004

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1. Information deficit in the investigation of violent crimes

Violent crime investigations are often faced with the need to bridge a shortage of information. This can, to an extent, be neutralized by the use of the profiling of unknown perpetrators of criminal offences and by polygraph examination (the credibility assessment) (Selič, Juratovec, 2004).

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Psychological research into individual personal characteristics and structural elements (character, emotions, temperament, adaptation potentials, coping mechanisms, personal maturity etc.), conducted by psycho-diagnostic tools with appropriate measurement features, has confirmed that, in general, perpetrators of criminal offences do not differ from control groups composed of "ordinary" citizens (Selič, 2001). It is therefore important that psychological factors, particularly innate potentials, which are activated in certain conditions of socialization or in specific triggering situations, should be taken into consideration.

Many scientific disciplines and no small number of experts strive to explain violence and to predict the dimensions and dynamics of this interpersonal and also global phenomenon. Unlike experts, the investigators of severe criminal offences are more eager to search for concrete perpetrators than to detect latent socio-dynamic roots. Identifying a perpetrator can be accelerated using the findings from etiologically oriented research, in so far as they relate to concrete situations in their consideration and explanation, and if they complete concrete findings with the conclusions of profound analysis (Selič, 2001). Violent crime investigations are complicated and relatively demanding cognitive processes, which start with the perception of a criminal offence and continue with the collection, protection and verification of personal and material evidence (Selič, 2002). This can be understood as a process of recognizing the truth (the gnoseological aspect) and as a formally arranged phase of collecting and finding the facts. These facts are either accepted by the court and confirmed and taken into account, or rejected as unimportant (the legal aspect).

Of those methods originally related to psychology and used in the field of criminal investigation in its broadest sense, forensic psychophysiology is undoubtedly of the utmost importance (Selič, 2001). There are several reasons for this – research activity is diversified, and the use and applicability of the polygraph method is increasing. Its applicability depends on the development, verification and introduction of new test formats which follow the needs of users, not only in the field of criminal investigation but also in the protection of constitutional regulation, in the public sphere and in the economy. Profiling is not a psychological but a criminal investigation method, although psychological knowledge and conclusions are very often the most important where profiling is concerned. It is based on an elaborate analysis of the occurrences at the scene, investigation of the life and habits of the victim, the manner of the perpetrators' actions, and the conclusions of forensic experts (Vorpägel, 1998).

Crime investigators are more or less successful at dealing with a shortage of information when trying to investigate criminal offences. The version construction should lead the investigators from possibility to certainty. In reconstruction, verification, and confirmation of versions, the profiling and polygraph method can be used (Selič, Juratovec, 2004).

2. Criminal profiling

The term “profiling”, or “criminal profiling”, was introduced during the last century in expert discussion and practice (Turvey, 1999; Douglas in Olshaker, 1996, 1999), and still denotes the intuitive process of reaching conclusions by investigators (Turco, 1990). Douglas and Burgess (1986) thought the process was similar to psychiatric diagnostics. Turco (1990) emphasized the psychodynamic and analytical groundwork of profile construction; however, forming databases at least appeared to switch attention from the psychodynamic and/or behavioural logic of creating a profile and understanding the dynamics of certain criminal acts to the search for the “typologically appropriate” perpetrators of these offences (Selič, 2001). The possibility of such conclusions seemed much more reliable and safe because it was possible to reach conclusions with a high level of certainty, on the basis of the defined variables of many perpetrators of the same criminal offence; however, this also brought with it some limitations, and it did not abolish the idiosyncrasies of the clinical approach. Experience in the United States has shown that profiling not only has been useful for detecting sexually motivated serial killers, but could also serve as a tool to define the personal characteristics of an unknown perpetrator of a criminal offence involving violence (Turvey, 1999; James, 1991). The quality and use of the profile is limited or defined by the quality of the crime scene investigation, and by those identified features which enable the profiler to reconstruct the perpetrator’s actions at the place where the criminal act occurred.

Slovenian profiling practice (Selič, 1996) was based on case studies, since databases and “homogenous” examples of criminal offence characteristics were not available or established. The concept was the same as the deductive model, which was introduced by Turvey (1999). In individual cases the forensic psycho(physio)logist, as a member of the investigation team, participated in the inquiry by creating the unknown perpetrator’s profile and possible modifications along with the known facts as they were uncovered. The forensic psycho(physio)logist participated in all phases of investigation (Selič, Jura-

tovec, 2004). Studies have shown (Horvath and Meesig, 1996) that one of the possible mistakes of crime investigators was their misinterpretation of discovered traces, and a certain type of (potential) material evidence could be overlooked where there was a lack of sufficient time, knowledge and/or motivation. This was an important argument for including a profiler in the team immediately after the notification of a criminal act.

3. The use of the polygraph method

Forensic psychophysiology is concerned with the use of psychophysical methods to detect deception in the framework of criminal law. Yankee (1990) stressed that an adequately trained polygraph examiner is not simply a technician or routine operator for a polygraph instrument, since the polygraph examination is one of the most demanding and complex psychophysical examinations. The author described psychophysiology as a science which examines the subject's physiological responses to psychological stimuli without expecting any specific emotions that could be recognized on the basis of physiological parameters. The process starts with a pre-test interview and continues with the administration of the polygraph tests, chart analysis, and a post-test interview, finishing with the interpretation and evaluation of the polygraph charts. An evaluation of Slovenian polygraph examination practice during the period 1997-2004 was based on the analysis of the whole procedure, the verbal and non-verbal behaviour of the client, and chart evaluation (Selič, Juratovec, 2004).

The forensic psychophysiological (the polygraph examiner) should disclose truth and true facts, not only misleading facts (Matte, 1996:4). One of the most important conditions for a higher level of quality of polygraph examiners' work is the introduction of new test formats. In Slovenia, during the aforementioned period, we seriously considered combining the clinical and the numerical approach. The use of verified and reliable tests was more important than a change of orientation from clinical/global to numerical. Any modifications or mixing of different types of concepts can cause huge problems and make interpretation more difficult, which was discovered by Horvath (1991), who verified the validity of Backster's control questions in Reid's CQT format. The most important test formats are also based on consistent theoretical concepts and explanations which have been verified many times. The numerical evaluation of the subject's reactions does not come from the subjective impressions of the examiner, but follows clear and defined measures and rules, for example Backster's laws (Backster, 1994; Selič

2009). All users, no matter from which polygraph “school” they come, have for a long time agreed that the correct formulation of questions, within the prescribed test structure, is of the utmost importance for the results of the examination (Thompson, 1998:2). The significance of question formulation was also clearly demonstrated when introducing the computer polygraphs and algorithms used for the evaluation of polygraph charts. Apart from the Concealed Information Test (CIT), in Slovenia the most commonly used test formats were the Zone Comparison Test (ZCT) and the Modified General Question Test (MGQT) (Selič, 2002).

A valid and reliable test is a necessary but not a sufficient condition for a reliable and technical-based result in a polygraph examination. The outcome mostly depends on the level of expert knowledge of the polygraph examiner. However, it must be noted that a simple translation of any verified test format without that knowledge and the consideration of the original concepts and theoretical grounds can lead to erroneous evaluations (Selič, 2009).

The Slovenian practice of psychophysiological veracity examination using a polygraph was successful in the past mainly due to the use of Peak of Tension Tests (POT). This test requires the questions to be equally (un)important and/or (un)threatening for an uninvolved person (Selič, 2002). Some authors called such a test the Concealed Information Test (CIT). It consists of a series of questions, of which one is relevant (related to true information in the criminal offence) and the others are neutral, but, for an uninvolved person, equally likely. A series of up to ten concealed information tests is administered, each set consisting of five questions with the position of the relevant question changing between the second, third and fourth place in the sequence. In Slovenia the use of Control Question Tests (CQT) used to be limited, since the CQT included only one aspect of the criminal offence (usually this is a direct question about the subject’s involvement), whereas a series of CITs highlights the criminal act from different angles and includes particulars which are known only to the perpetrator (Selič, 2009). In this regard special consideration was always paid to the likelihood that the perpetrator had noticed these particulars and remembered them. For possible recidivists and/or serial offenders the tests were composed exclusively for the most recent crime, with the expectation that this event would be most likely to be recalled (Selič, Juratovec, 2004).

North American and Israeli forensic psychophysiology uses the term “guilty knowledge” (of the criminal offence) rather than “concealed information”. Guilty Knowledge Tests (GKT) have an important advantage over Control

Question Tests in the field of psychophysiological diagnostics (Selič, 2002). The critical (relevant) information is related to a criminal offence, and if it is not compromised (in the media or during the investigation process), the format protects the uninvolved person because the questions are balanced, equally possible and logical. The test construction is standardized, and the evaluation of the psychophysiological responses is quantified, therefore discussion of the evidence value of the GKT results seems to be pointless. GKT is based on appropriate psychophysiological theoretical issues and numerous investigative confirmations (Selič, 2009).

The relatively rare use of GKT in criminal offence investigations in the USA is probably due to the frequent compromise of the relevant data in the media. An uninvolved person who read about the crime in a newspaper could actually be evaluated as false positive after a series of GKTs. Israeli authors therefore suggest a solution at two levels – the first level is fewer GKTs (less relevant, only the facts that the perpetrator would know), and at the same time more repetitions, which enable efficient psychophysiological diagnostics; and the second level is a different manner of police work, which reduces the chances of critical information being compromised (Selič, Juratovec, 2004). The first recommendation concerns the process of test implementation itself, but the second exceeds the power and possibilities of polygraph examiners' decision-making – not only in Israel or the USA but also elsewhere in the world.

CIT and GKT are in concept peak-of-tension tests; the difference is just in the name, and not in the construction and manner of operation. In Slovenia peak-of-tension tests were usually called an indirect method. When the crime investigators inform the polygraph examiner and allow him a polygraph inspection of the crime scene prior to the dynamic phase of the criminal investigation, they have already created the necessary conditions for the later use of peak-of-tension tests. If they take advice on which critical information is important for later polygraph examination, the possibility of the use of POT tests is even greater and the disclosing of information to the public limited (Selič, 2009).

4. Combining profiling and polygraph method administration

The process of building a profile of the perpetrator for a certain criminal offence is similar to the process of psychodiagnostics and clinical psychology treatment planning (Selič, 1996).

It is necessary to evaluate the collected data properly, reconstruct the dynamics which led to the situation, and decide on a hypothesis. This is followed by the construction of the profile, the verification of its suitability, and the collection of feedback information. This is a typical problem-solving situation and the basic premise of the described creative synthesis process is in intrapsychic structure (way of thinking, sentiments etc.) directing human action. These are the grounds for the whole profile construction – from the analysis and classification of the collected information (including legally relevant facts) and the reconstruction of the event, to the establishment of the profile. The postulate on the psychological link between personal characteristics (structure) and behavioural manifestations is only true when the behaviour, as a result of an interaction between a personality and the situational circumstances, is understood and explained (Selič, 2001). Many times life situations which could have a huge impact on a person's behaviour are a result of the person's actions; therefore, it is logical to define the interaction between a situation (which, for example, led to a criminal offence) and the personal characteristics of an individual (the perpetrator) by psychological phenomena as wishes, expectations, motives and interests, which all have an impact on the profile construction (Selič, 1996).

4.1. Overcoming information gaps

A necessary basis for the profiling and/or polygraph examination is an adequate amount of information collected during inspection of the crime scene. In Slovenia, during the period 1997-2004, the use of both investigation support methods began with the inspection of the crime scene and continued in successive phases. The collection of information was extensive. For a profile construction several groups of data or materials were provided – for example, photographs and/or video tapes of the crime scene; information about the neighbourhood (placing the crime scene in a socio-cultural and ethical framework); and an integral and exhaustive report on the inspection and notes on all the collected reports (it is important to document conversation immediately, because later recordings are imperfect due to poorer recall, the reorganization and classification of information, and often because of selection and evaluation) (Selič, 1996). All of the above is also important in the polygraph examination. Information about possible real suspects is counterproductive in the profiling and the preparatory phase of the polygraph examination, since they can unconsciously affect attention and decision-making (Selič, Juratovec, 2004).

According to some sources (Turvey, 1999:257), it is possible to classify psychophysiological veracity examination using a polygraph as a profiling method. Geberth (1993:474) believes that the timely inclusion of a technically competent polygraph examiner and the use of the polygraph method can lead the investigation in the right direction, and profiling can show the characteristics of the real perpetrator (Geberth, 1993:492). In the investigation of violent crimes the methods complement each other. They are also both about the evaluation of the behavioural and personal characteristics (of the perpetrator and of the victim), and the use of these evaluations in the context of criminological and criminalist knowledge. Therefore, in Slovenia it was reasonable to combine profiling and the polygraph method in the investigation and prevention of criminal acts, because overlapping of the phases in establishing a profile and polygraph examination occurred (Selič, Juratovec, 2004). The latter leaned on the use of tests for the recognition of circumstances at the crime scene (CIT or GKT). The preparation of the series of CITs (Concealed Information Test) overlapped the establishment of a profile of the unknown perpetrator and in the test all the defined circumstances had to be considered.

Forensic psychophysiology, in combination with profiling, was useful as a method either of eliminating uninvolved people (from the circle of suspects) or of defining those people most likely to be involved in the criminal act. It also served as a means of evaluation of the established profile. In the ideal case, this meant that, on the basis of an established profile of the unknown perpetrator, a group of suspects was defined, the veracity of the statements with a polygraph examination was verified, and the person confessed to the crime in an interview after the polygraph tests had been administered. The confession was later compared to the reconstruction of the event as it was drafted in the profiling process, while the characteristics of the actual suspect were compared to those in the profile (Selič, Juratovec, 2004).

The definition of a motive or motives provides the creative grounds for completing profiling and the psychophysiological veracity examination using a polygraph. In the profiling process we analyze the perpetrator's behaviour in the context of a trace at the crime scene and the characteristics of the victim, and together these compose and represent the issue for defining the perpetrator's motivation (Selič, 1996). In this way a profile is a (psycho)logical component, related exclusively to an investigated crime. A motive for a criminal offence is a factor which can be additionally highlighted or confirmed by the polygraph method. If it is wrongly defined it is possible to modify a profile on the basis of the polygraph test results (Selič, Juratovec, 2004).

The logical combination of psychophysiological veracity examination using a polygraph and (criminal) profiling could also represent an important challenge for researchers. The idea of the complementarities of profiling and polygraphy (Selič, 2001) necessarily raises the issue of the professional competencies of examiners/profilers/investigators. Profiling is not a synonym for psychologising. It requires an extensive knowledge of crime investigation tactics, technique and methodology, an understanding of forensic medicine, and additional and special psychological knowledge. Investigative support (profiling and polygraph examination) in Slovenia efficiently acted as an augmentation to all criminal knowledge with additional psycho(physis)logical knowledge during the period 1997-2004. However, its cognitive and guidance role depended on each criminal investigation. The results of the polygraph examination were objectified through a numerical evaluation of polygraph charts, and the consistent inclusion of a second (expert) opinion; however, the profiling process was evaluated at every moment by the verification of the authenticity of the suspect's statements, within the process of polygraph examination. Any closing of the self-confirmation circle of investigative support would have disabled creative dialogue and cooperation with the criminal investigators, since the investigative support and criminal investigators operated as reflexion and correction to each other (Selič and Juratvec, 2008).

4.2. Case presentation: combining profiling and the polygraph method

CASE *

A middle-aged man was murdered in his room between Saturday night and Sunday morning. The unknown perpetrator(s) used firearms. The medical examiner concluded that two injuries led to death (a shot and a knife wound). The traces at the site showed that the perpetrator and the victim fought and struggled, and the perpetrator(s) won only after they had used firearms. The perpetrator left bloody footprints.

The post-mortem examiner identified two types of injuries on the body – cuts and stabs and bullet wounds. The stabs came from different directions and the cuts were identified as defence injuries. In addition there were some skin abrasions and suffusions.

* This description of the case is based on the data presented to the public via the media.

After both the polygraph inspection of the crime scene and the analysis of the initial collected reports were completed, two activities were performed simultaneously: preparation for the use of the polygraph method, and profile construction. The crime investigation followed versions which did not take into account some indices, so elements of the profile were verified only after a long period of time.

Elements of the profile

After the analysis of the collected information was complete, the profiles of a few criminals previously convicted and imprisoned were constructed. We introduce just one, named the “Slaughterer”:

- a woman or a man, rather short (up to 170 cm)
- body weight does not exceed 65-70 kg
- socio-cultural origins in an environment which gives priority to cold weapons
- possible affiliation to an ethnic minority/special ethnic group (for example, Romany)
- person is unskilled in martial arts
- person is not skilled in handling cold weapons
- person without own (secondary) family, either not intimately attached or only weakly attached
- does not belong to an organized criminal gang
- has average physical strength
- does not know the victim personally
- in a pair relationship is submissive and can be guided
- intellectually inferior
- incapable of planning and anticipating events
- incapable of solving problematic situation efficiently
- attracted to “dirty work”
- expects material benefit from the act
- prone to panic responses
- has poor control over impulses
- great possibility of the person’s decompensation
- traumatised due to the event – possible sleep disturbances, alcohol abuse and/or drugs as a consequence.

Elements used for the Concealed Information Tests (CIT):

The circumstances known to the “Slaughterer” which were used in the series of CIT and unknown to the public:

- shoes were removed
- access to the room
- the victim was asleep on the bed – the location of the bed in the room
- the first stab failed
- the victim resisted
- pushing out of the room
- help of the co-perpetrator with firearms
- the victim falls due to a shot
- stabbing of the lying victim
- place/position of last (deadly) injury.

After a certain period of time, the attention of the criminal investigators was drawn to a young man and his acquaintance. Both agreed to voluntarily participate in the polygraph examination. With the first, the polygraph method was initially used for another criminal offence to which the suspect had also confessed, and then after a pause and consultation with his lawyer he also agreed to take a test related to the murder.

The suspect knew and cleared the circumstances which were unknown to the public; he could not have known them unless he participated in the criminal act. It was possible to use the content of his confession to construct additional tests to recognize the circumstances for other suspects, because his confession substantially filled the lack of information related to the preparations for the act. In the interview after the administration of the polygraph tests he said where he and his collaborator had left the car. The collaborator had told him where to go. He had taken his shoes off because he did not want them to squeak. He had entered the room and stabbed the person sleeping on the bed. He had been surprised because the victim jumped up – the man was big and strong, he screamed, defended himself and pushed the suspect out of the room. The suspect stabbed him several times in the meantime, but without visible or fatal consequences. Everything was bloody and horrible, totally different from how he had imagined it beforehand. Only the shot from an accomplice subdued the victim. The man fell to the floor and the suspect stepped back from him, upset and shocked. In anger he stabbed the man lying on the floor once more.

During the exhaustive investigation it was possible to verify the elements of the profile and the relationship between the perpetrators. The data collected confirmed the profile of the “Slaughterer” and significantly contributed to the further investigation.

Technically the appropriate use of the polygraph method also enabled the additional inflow of information, and subsequently the modification of an existing profile of an unknown perpetrator of a violent criminal offence. In practice, the psychophysiological veracity examination using a polygraph justified and, on a number of few occasions, exceeded the expectations of the crime investigation, although only when considering professional rules and criteria; therefore, it is easy to refute the concerns of all those who doubt the usefulness of the method (Selič and Juratovec, 2004). The use of the polygraph method in the aforementioned case contributed to the investigation of several criminal offences and the identification of several suspects. In the described case the successful use of the polygraph method led to a thorough preparation and exact knowledge of the event. The reconstruction was based on the inclusion of all elements expressed by the forensic experts, and these elements were used as an issue for drawing up the CIT on the recognition of the circumstances of the crime. The reconstruction was created only after a profound discussion with the post-mortem examiner. In this regard the profiling process and/or preparation for the use of the polygraph method should not be limited only to the inspection of documented material. The suspect confessed to the crime after he was indisputably faced with his own psychophysiological responses. The interview after administration of the polygraph tests was adapted to the characteristics of the perpetrator from the "Slaughterer" profile. The event strongly exceeded the estimates in the profile as far as all dimensions are concerned, especially by the intensity of emotions, but the profile was shown to be correct according to the perpetrator's emotions during and after the act, even though the experienced reality cannot be compared to the written one.

5. Conclusion

In Slovenia, after 2004 the Criminal Investigation Support Unit was terminated, and no data has been available on polygraph examination practice in the police. In the private field, the polygraph method is used for different purposes, for example human resources management, fraud detection and insurance fraud investigations.

Any potential systematic research on the complementarities of profiling and polygraph examination would probably strike against the question of whether the distinction between the two methods (polygraph method and profil-

ing) according to the necessary information input, human resources and the principles of functionality, methodology, professionalism and specialization, was logical at all, and also of which method (if used in isolation) was actually superior. The answers at the practical and the academic level are not necessarily the same.

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