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Alibi Testing Potential in Polygraphic Examination

Elliot Aronson's *Social Psychology* reads: "It would be good if there were an infallible examination to establish whether someone is lying [...]. The police could ascertain whether the suspect's claim that while the crime was being committed he was eating a sandwich at home is true."

The question of reliability of the alibi of those suspected of committing a crime is frequently a problem for officers of law enforcement and prosecution. In many cases, having that fact confirmed by the relatives of the suspect is not convincing for the officer. Polygraph examination could help to determine the actual whereabouts of a given person when the crime was being committed.

As long as the commonly shared opinion was that a condition for conducting polygraph examination is possession of specific knowledge about the crime

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being investigated by the person examined – and most importantly, the determination to conceal it – testing an alibi with the use of such examination seemed fairly improbable.

Thanks to the research on the human brain whose results have been published in the last few years we know how the mental and emotional trace, which is what is most interesting to us here, originates during the examination. We know that if we come into contact with an event that captures our attention by its singularity or significance, such an instance will be recorded in our nervous system. The event may be perpetration of a crime, contact with persons who committed the crime, or with phenomena or objects that hold traces of criminal activity, etc. Emotions present in such cases born at the time of the event, for example fear of the consequences of the committed act or a simple sense of guilt, mean that these traces record especially strongly in our nervous system. Their existence allows a later acceptance of notification of the crime, interrogation of the witness or suspect, and the occurrence of a confrontation.

Parallel to the information concerning the event itself, our nervous system also 'records' the emotions that accompanied the event. The mental and emotional trace will be 'recorded' in our nervous system both when we participate in or witness a crime, and also when we receive information related to a crime at a later time.

If, during a polygraphic examination, a question concerning a fact is asked, the person examined compares the content of the question to the resources of the memory. Should a particular mental trace ('the record of the fact') be found, the emotions accompanying it will also be 'discovered', which will result in excitation of the autonomic nervous system. Despite the fact that the mental and emotional traces are stored in different parts of the brain, they are inseparably connected.

Assuming that polygraphic research is based on revealing mental and emotional traces, independent of the fact whether the person examined tells the truth or is trying to conceal or distort the truth, it is possible to define what actual mental trace is recorded in that person's nervous system during an examination.

How can this knowledge be used for testing the alibi?

The first example concerns the disappearance of a young woman. On June 7, 2006, at about 8:35 a.m., Joanna S. (20) left her home on the outskirts of

Czechowice-Dziedzice and went to the train station in Goczałkowice Zdrój. She was to take the 9:05 train to Katowice. On that day at 11:00 a.m. she was to take her semester exams at the university. It was later discovered that Joanna S. did not reach the train station on that day. On her way to the station, at 8:46 a.m. she made a telephone call to B., her university colleague. He did not answer, but he rang her back a few minutes later. Joanna S. did not answer the phone.

During the interview preceding the examination, B. explained that he and Joanna S. were students from the same group at university. He had seen her for the last time on Saturday, June 3. They had made an appointment to meet on June 7 at the university. On that day they were to take an exam. On the morning of June 7, when B. was still at home in Katowice, he noticed that Joanna had phoned him at 8:46 a.m. He called her back, but she did not answer the phone. When he reached the university, Joanna was not yet there. He telephoned her again, as did two of her female friends. They were also trying to establish contact with her after the exam. To no avail. On the next day, B. contacted Joanna's sister, who told him that Joanna had left for the exam the day before and had never returned home.

The examination made use of a test aimed at the potential confirmation of the version presented by B. Questions referring to his whereabouts at 8:46 a.m. on June 7, 2006 were used.

1. Are we in Kraków?
2. Is it Saturday today?
3. At 8:46 a.m. on June 7 this year were you at the university?
4. ...at the plot by the Goczałkowski Reservoir?
5. ...traveling between Czechowice-Dziedzice and Goczałkowice Zdrój?
6. ...at home in Katowice?
7. ...at the train station in Goczałkowice Zdrój?
8. ... traveling between the allotment and Goczałkowice Zdrój?
9. ... on your way to Katowice?
10. At 8:46 a.m. on June 7 this year, were you at any place other than the ones I have mentioned?

The objective of the test was to check the mental and emotional trace concerning the place where the person examined was at the time when Joanna S. disappeared that was registered in his nervous system. Following the available knowledge on the functioning of the human brain, memory, and emotions, it was assumed that if the examinee was at home in Katowice at the moment of Joanna S.'s disappearance, he would react emotionally to this particular question, as such a mental and emotional trace is recorded in his

nervous system. It was assumed that under normal circumstances, Joanna S.'s telephone call would be neutral for him, but due to the circumstances, a recollection of the fact that Joanna S. phoned him at the time had to raise emotions. They should be tied to the date and the hour when Joanna S. phoned him, but also to the place where he was at the time. Confirmation of these facts could serve both to confirm his version and also to eliminate B.'s potential direct participation in Joanna S.'s disappearance. All the questions from 4 to 9 were justified by the circumstances of the case.



Polygram no. 1.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them. During the first presentation of the test the examinee never knows the order in which the questions are to be asked.

As can be seen, the largest emotional changes in the galvanic skin response were present after the question no. 6 was asked. This gives grounds to assume that at around 8:46 a.m. on June 7, 2006 the examinee was, to the best of his knowledge, at home in Katowice. Practically, it is impossible that emotional changes could be present after the question no. 6 was asked and were absent after question no. 5 if, during the time mentioned in the questions, the examinee had been on the way from Joanna S.'s home to the train station in Goczałkowice Zdrój.



Polygram no. 2.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and give true answers in his head. The examinee did not speak aloud. Before the second presentation of the questions, the examinee is always advised that the questions will be asked in the same order as during the first round.

In Reid's Control Question Test, during which the examinee was presented with questions referring among others to his direct connection with the disappearance of Joanna S., major emotional changes were evidently present after control questions, rather than critical questions, were asked.

The following example concerns the case of the brutal murder of an elderly married couple. The tests were conducted more than 13 years after the crime had been committed. Submitting to polygraphic examination was suggested to persons who were in the possession of keys to the house or could have been let in at any time. These criteria were suggested by the way the crime was committed. The time of murder was defined fairly precisely in the course of the investigation. All the persons examined were interrogated as witnesses within several hours of discovery of the crime. Among other things, they described where they were and what they were doing at the time.

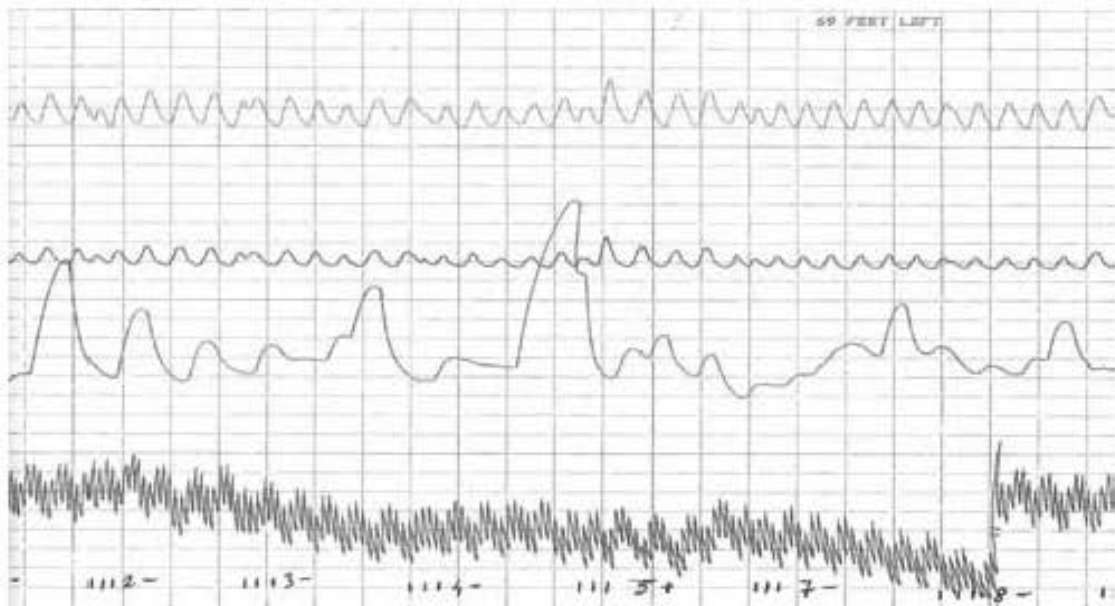
One of the tests used concerned the place where the persons examined were during the killing.

1. At the time when your parents were murdered, were you at the theatre?
2. ... at the cinema?
3. ... at your parents' house?
5. ... at home?
6. (Question no. 6 was a spare in case the person examined pointed to a different place where he/she was from the one resulting from the files of the trial and at the same time not accounted for by the examiner in the construction of the test. This was caused by the very long time span from the day of the crime to the day of the examination.)
7. ... on a walk?
8. ... at work?
9. ... visiting friends?
10. At the time when your parents were murdered, were you at any place other than the ones I have mentioned?



Polygram no. 3.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them.



Polygram no. 4.

During the registration of the recording presented above, the examinee was to listen carefully to the questions asked and provide true answers by answering loudly YES or NO.



Polygram no. 5.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions and give true answers in his head. The examinee did not speak aloud.

After question no. 4 was asked, concerning the examinee being at the parents' house at the time of the killing, no significant emotional changes were registered. Decidedly the largest emotional changes were present after question no. 5, that is after the place that the examinee cited as the one where he was at the critical time was named. Changes in both galvanic skin response and arterial blood pressure are visible.

It is hard to imagine that there could be no mental and/or emotional traces registered in the nervous system of the examined person if he were a witness or perpetrator of the murder of his parents. The remaining questions concerned other, probable places where the examinee could have been at the time.

The examinee remembered beyond any doubt not only where he was but also what television program he was watching and on which channel, and even what news the newscaster was reading at the time when he was telephoned about the death of his parents. The statement of the examinee was compared with the witness interrogation notes made a few hours after the disclosure of the killing.

The examination proved what mental and emotional traces related to the place where the examinee was at the time of the murder were registered in his nervous system. This provides grounds to assume that the examinee, to the best of his knowledge, was at his own home when his parents were killed, and was not in their house at the time.

The following example concerns the murder of Edward F. in February 1997. The examined person was the victim's grandson and was suspected of the murder. Both the interrogation of the examinee and his statements during the examination showed that he visited his grandfather very rarely. The last of these visits had taken place many months before the case in question.

A few weeks after the killing, the officers conducting the preparatory proceedings returned the keys to the flat of the deceased to his daughter. Asked to do so by his mother, the examinee accompanied her to his grandfather's flat to help to clean it. This took place in March 1997 and, the examined claimed, it was the only time that year that he visited Edward F.'s flat. The flat had been thoroughly searched and was in an extremely messy state, with numerous traces of blood, as the assailants had behaved very brutally towards Edward F.

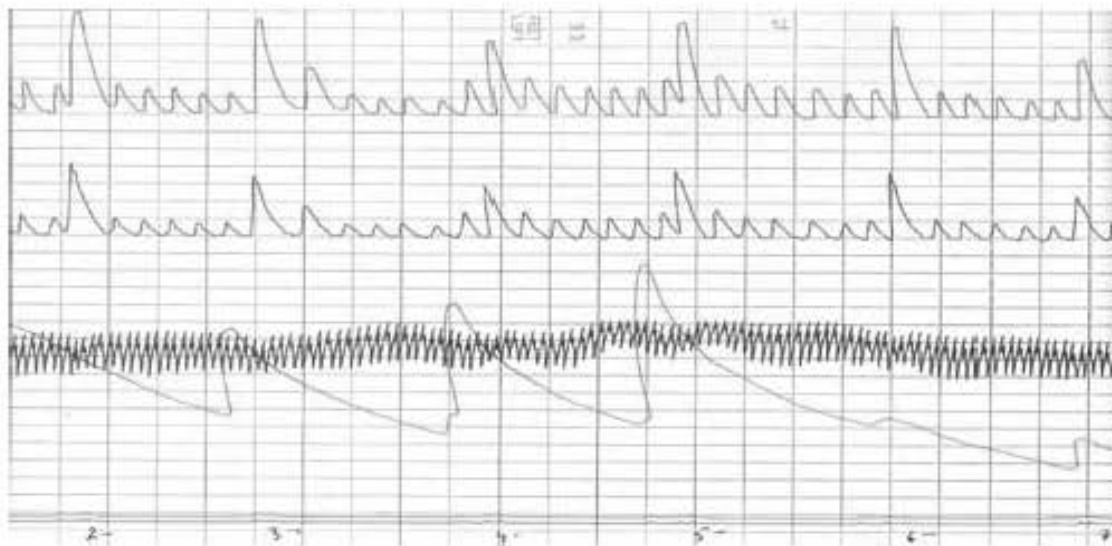
One could imagine that for a young man who remained for a few hours in such

conditions, this was a shocking experience and was recorded permanently in his nervous system.

A problem known well to law enforcement officers emerged in this examination. The person examined – accused, in this case, of perpetuating a brutal murder – denied being at the critical time at the scene of the crime, yet at the same time did not remember – due to the passage of time – where he was at the time when the murder was committed. In this case, questions referring to the place where the examinee was when the crime was committed could not be used.

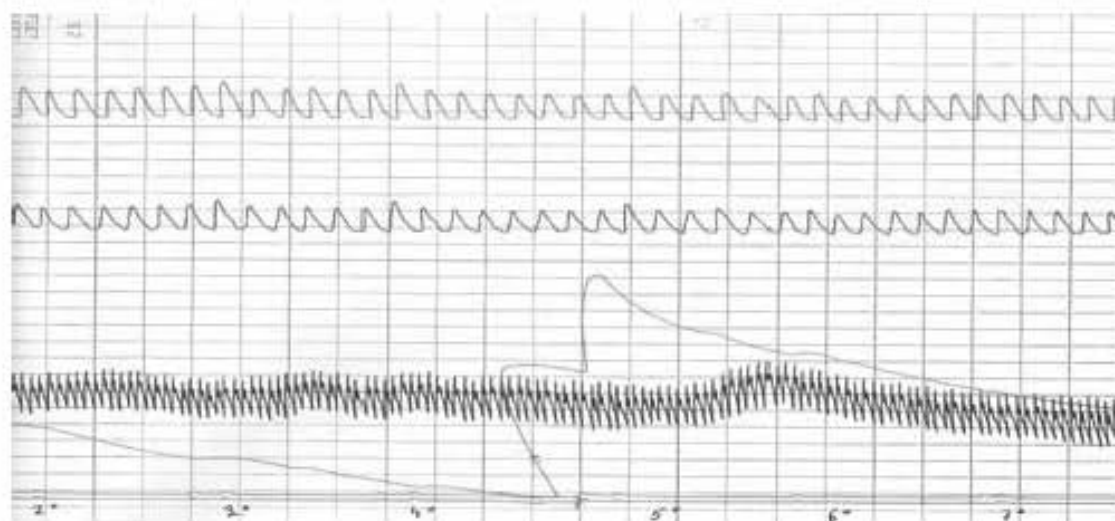
The examination made use among others of a test concerning the time, or to be more precise the month, when the victim's grandson was in the victim's flat.

1. Were you in Edward F's flat in November 1996?
2. ... in December 1996?
3. ... in January 1997?
4. ... in February 1997?
5. ... in March 1997?
6. ... in April 1997?
7. ... in May 1997?
8. Were you in Edward F's flat at times other than those I have mentioned?



Polygram no. 6.

During the registration of the recording presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them.



Polygram no. 7.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions and give true answers in his head. The examinee did not speak aloud.

After question no. 4 was asked, concerning the month when Edward F. was brutally murdered, no significant emotional changes were registered. It is hard to imagine that participation in such a killing could leave no mental and/or emotional traces. After question no. 5, which concerned the period when the examinee helped his mother to clean the flat, changes in both the arterial blood pressure and galvanic skin response are clearly visible.

In this examination it was determined what mental and emotional trace related to having been in the flat of the deceased was registered in the nervous system of the examinee. This provides grounds to assume that the examinee, to the best of his knowledge, was present in Edward F's flat in March 1997, and was not present in the flat in February 1997, that is in the period when the murder was committed.

The following examination concerned a repeat offender and a case in which he claimed to have been wrongly accused on the grounds of the victims' testimonies.

At around 11:00 a.m. on August 13, 1997 two men entered a jeweler's shop. Its owners, Henryk and Leonarda S., were present in the shop at the time.

The men pulled out items which looked like firearms and demanded money. Leonarda S. tried to escape to the shop's backroom, and Henryk S. tried to activate the alarm system whose switch was situated under his desk. At that time, one of the men – Marek L. according to the testimonies of the victims – began to chase Leonarda S. and stopped her. The other assailant – Michał W. as the victims testified – hit Henryk S. on the chest with the pistol and then led him to the shop's backroom. The assailants made their victims lie on the floor. When Henryk S. tried to talk to the attackers, one of them hit him on the head with the gun. Leonarda S. was also hit repeatedly with the gun. The attackers bound the victims with plastic tape and gagged and blindfolded them. They then stole gold jewelry and other objects of value they found in the shop.

Of significance here is the information that on February 7, 2006 the regional court in Gdynia found Marek L. guilty and sentenced him to five years' imprisonment. Polygraphic examination was conducted at the request of the defendant's lawyer, after recourse to the appellate court. At the time, the examinee was on leave from the detention center.

Here, similarly to the previous examinations, the examinee – accused in this case of violent robbery – denied being at the scene of the crime at the critical time, and could not remember where he was when it was perpetrated. The examinee was arrested a few months after the robbery and was never able to reconstruct the course of the critical day. He claimed that he had met the victim for the first time in his life in court in 1999 when the trial began.

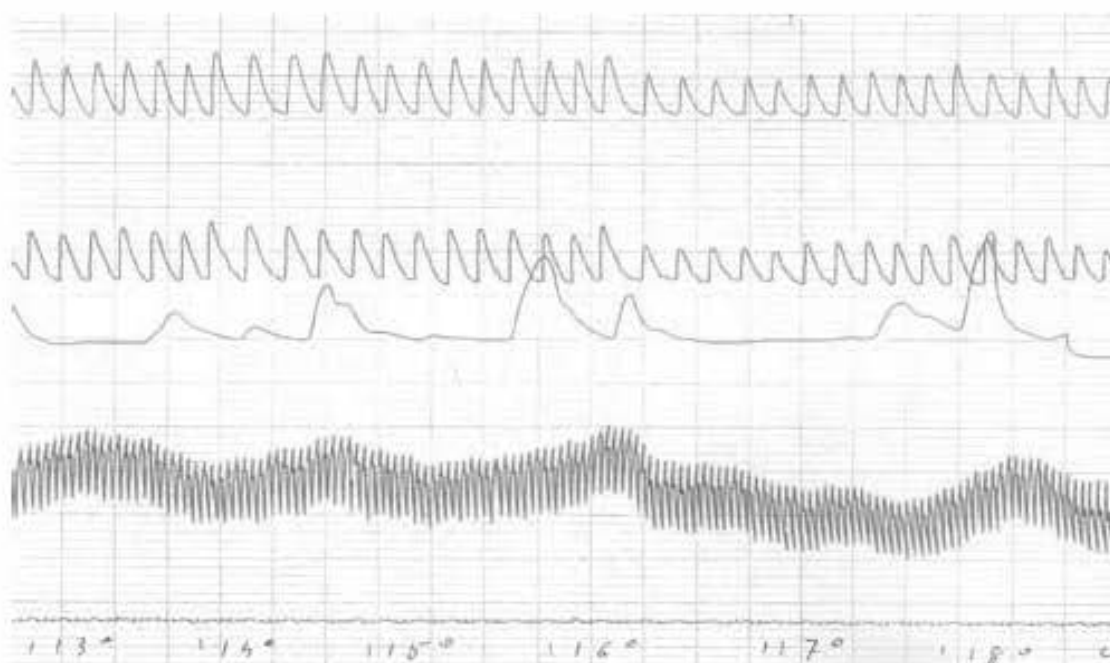
As the typical form of the test to check the alibi of the examinee could not be used in the examination, a decision was reached that the examination was to clarify when he had first seen Henryk and Leonarda S. It was assumed that participation in such a brutal robbery should leave very clear mental and emotional traces in the perpetrator. The fact that the examinee had previously been repeatedly convicted for crimes against property was of no importance here.

1. Did you see Henryk S. for the first time in 1994?
2. ... in 1995?
3. ... in 1996?
4. ... in 1997?
5. ... in 1998?
6. ... in 1999?
7. ... in the year 2000?
8. Did you see Henryk S. for the first time later than the times I mentioned?



Polygram no. 8.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them.



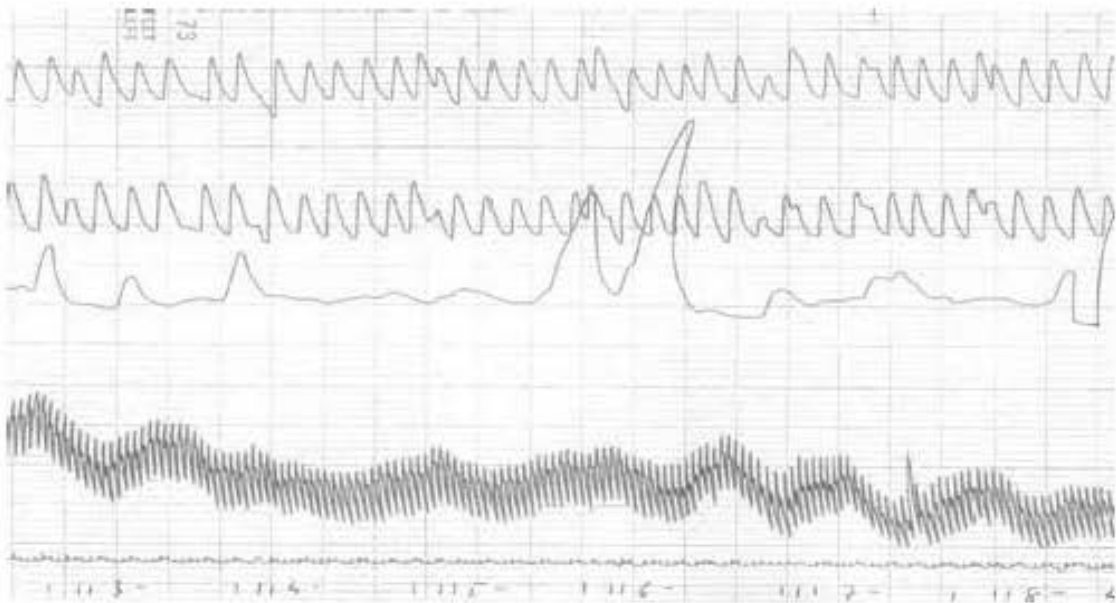
Polygram no. 9.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions and give true answers in his head. The examinee did not speak aloud.

It is perfectly visible that the largest emotional changes followed question no. 6, which gives grounds to assume that, to the best of his knowledge, the examinee saw Henryk S. for the first time in 1999.

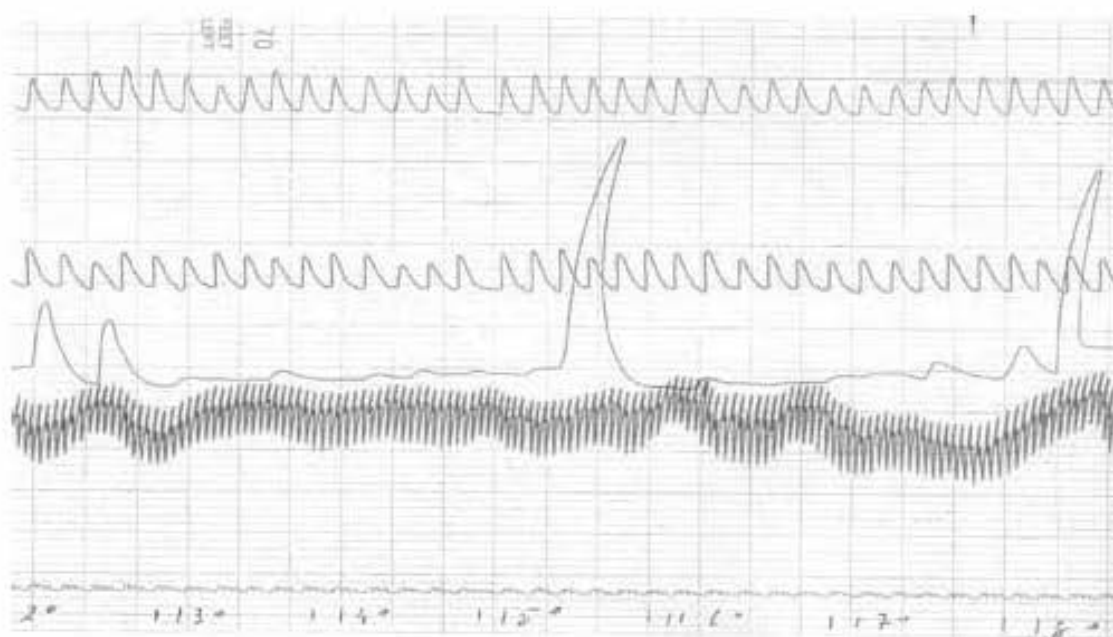
A similar set of questions was used in reference to Leonarda S.

1. Did you see Leonarda S. for the first time (the examinee saw a photograph of the victim while studying the file of his case) in 1994?
2. ... in 1995?
3. ... in 1996?
4. ... in 1997?
5. ... in 1998?
6. ... in 1999?
7. ... in the year 2000?
8. Did you see Leonarda S. in person for the first time at a later time than those I mentioned?



Polygram no. 10.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them.



Polygram no. 11.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions and give true answers in his head. The examinee did not speak aloud.

The largest emotional changes in arterial blood pressure and galvanic skin response occurred after question no. 6 was asked, which gives grounds to assume that the examinee, to the best of his knowledge, saw Leonarda S. in person for the first time in 1999.

There are cases when the persons examined do not deny that they were at the scene of the crime, yet present other reasons for which they could not have committed the crime they are accused of. This was the case with the murder of Irena K., which was discovered on May 1, 1997 in the town of B.

The body of Irena K. was found in her flat by her son. Her body was lying on her bed, and was partially naked. Injuries in the form of skin abrasions and bruises were visible on the neck of the victim. At that time two men were staying in the flat: Przemysław K., the son of the deceased, and his workmate Andrzej Z. Both the men were detained. The police determined that in the evening of the previous day the detainees had consumed some alcohol with the deceased, and then gone to sleep. Irena K. slept in one room, and her son with his colleague in another. In the morning, when the two men saw the body of Irena K., they reported it to the police. The examination was

conducted several hours after they were detained, which made conducting the procedure very difficult due to the emotional state of the examinee.

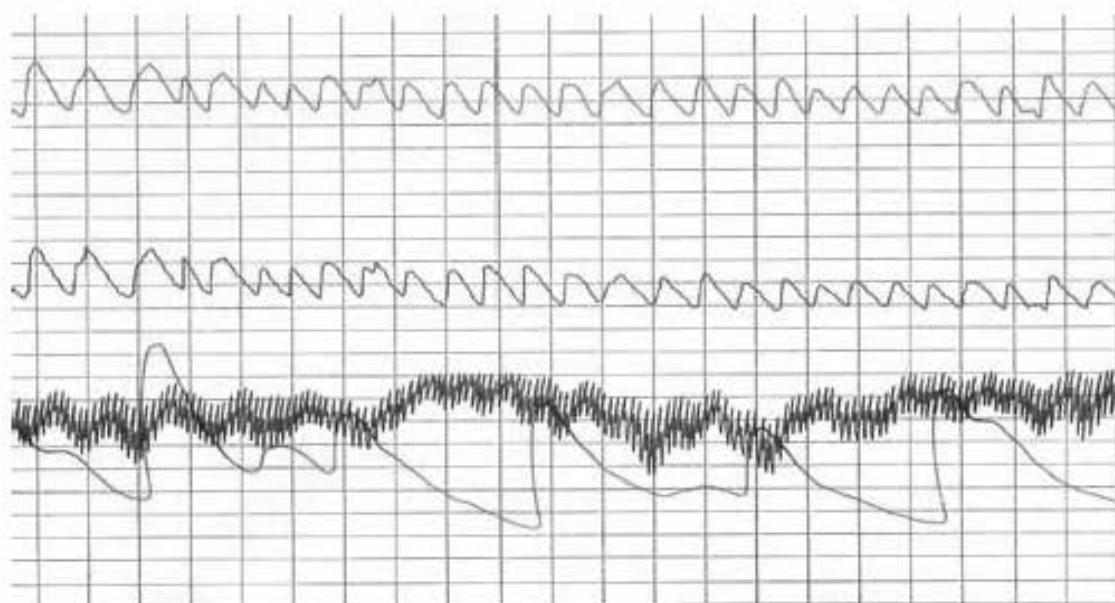
The examinee remembered at what time they had gone to sleep. Moreover, the approximate hour of the death of Irena K. was known. The following were among the questions used for the examination of Przemysław K.:

1. an irrelevant question
2. an irrelevant question
3. At the time when your mother was dying, were you eating dinner?
4. Were you sleeping in another room?
5. Were you holding her hands?
6. Were you watching her being strangled by someone else?
7. Were you holding her by the legs?
8. Were you strangling her?
9. At the time when your mother was dying, were you doing something that I have not mentioned?

It was assumed that the examinee was experiencing a strong trauma that while his mother was being strangled he had been sleeping in the room next door. Some apprehensions were caused by the fact that it had only been a matter of hours from the tragic death of a relative of the examinee, by the fact that a few of the questions were carrying a large emotional load, and by the statement made by the examinee that before the examination he had been interrogated for a few hours by policemen who were trying to persuade him to admit to killing his mother or to accuse Andrzej Z.

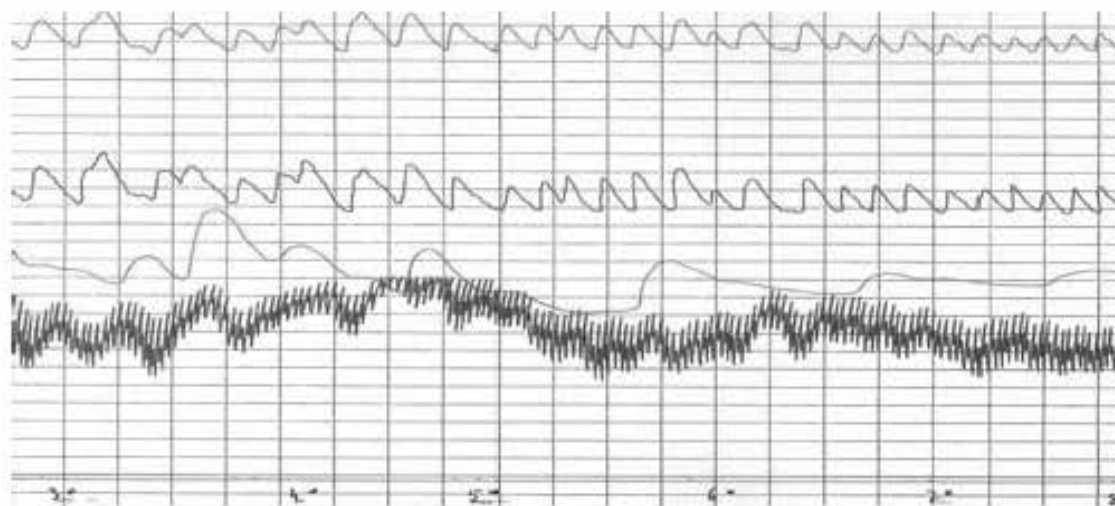
The largest emotional changes in the arterial blood pressure and the galvanic skin response were present after question no. 4 was asked, which provides grounds to assume that the examinee, to the best of his knowledge, was sleeping in the room next door while his mother was being strangled. One must at the same time be aware of the fact that the legibility of the recording of emotional changes was strongly influenced by the emotional state of the examinee and the extreme nature of many of the questions.

A few days after an opinion favorable for Przemysław K. had been issued, the police arrested the actual murderer, who admitted to strangling Irena K and stealing a few objects of value, and who described how he had managed to get into the victim's home without being noticed and subsequently leave it.



Polygram no. 12.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions asked and answer NO to all of them.



Polygram no. 13.

During the registration of the recording of emotional changes presented above, the examinee was to listen carefully to the questions and give true answers in his head. The examinee did not speak aloud.

Testing an alibi with polygraphic examination requires a number of conditions to be met. These include the high qualifications of the expert, appropriate conditions in which the examination is conducted, co-operation of the examinee with the examiner, and the satisfactory health and emotional state of the examinee during the examination.

While lack of cooperation of the examinee with the examiner actually renders conducting polygraphic examination testing an alibi impossible, the emotional state or health condition on the day of the examination is only a temporary problem. The examination may be repeated at a more suitable time with the same questions being used.

Emotional reactions that are unfavorable to the person examined need to be interpreted with the utmost care. In most of the examples quoted above, there were circumstances that might result in emotional changes unfavorable to the examinee, even when they were not connected with the acts they were suspected of.

References

Aronson E. et al. (1997), *Psychologia społeczna*, Zysk i Spółka, Poznań, p. 645. [text in Polish]

Lewandowski, E. (2005), *Sprawdzanie alibi w badaniach poligraficznych (wariograficznych)*, Problemy Kryminalistyki, 247, Warszawa. [text in Polish]

Lewandowski, E. (1999), *Testy pytań kontrolnych, jako podstawa badania poligraficznego*, Problemy Kryminalistyki, 224, Warszawa. [text in Polish]