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Criminalistical timedimension during criminal procedure

The scientific researcher working in the present is driven by curiosity. One raises questions based on his curiosity. One searches – sometimes for a lifetime – for possible answers. Ultimately, the right answer for each question. Asking questions is one of the most difficult tasks. Or rather, asking the right questions. These questions in scientific research should be simple, clear and to the point. One that does not avoid the need for a fair, rigorous and useful answer.

As a new science of investigation,[1] forensic science has been formulating its essential questions for over a hundred years. Answering these questions realistically can provide a basis for subsequent judicial determination of the facts and for the assertion of the state's criminal claims.

I could also say that the seven basic questions of 'my' pyramid model[2] (what, where, when, how, who, with whom, why?) have been raised to the level of a principle.

I can state, as a principle, that anyone who knows the exact answers to the incriminated offence, who knows the past events, is able to draw the correct legal conclusions from the facts. Let us not forget the wisdom of Roman law: 'da mihi factum, dabo tibi ius', that is, give me a fact, I will give you law. The question of fact always precedes the question of law, and one cannot act as a lawyer or legally qualify a case without knowing the statement of facts.[3] The opposite can also be true, i.e. one who does not know the answers to the questions, one who has a vague view of the past, cannot formulate a statement of facts and therefore cannot qualify the case. Fact-finding always precedes the legal work.

Among the seven "golden questions" already cited, it is no coincidence that the question "WHAT?" is the first one. The essential answer to "what happened?" is the initial answer. It is also the starting point for deciding whether the authorities really need to act in a criminal matter or in an administrative, labour, misdemeanour or other area. In the case of a criminal response, the apparatus, expertise, methodology and tools to be deployed will immediately change and the other fundamental questions will immediately become active. I underline the word 'immediately' in the sentence, because the question of time immediately becomes a live issue. Not only because of the need for speed in the investigation and fact-finding, but also because the question of "when?" is brought to the fore. Only after the question "what" do the questions "where-when-how?" come up. Almost simultaneously and urgently, the sub-questions arise, to which we need to provide the most precise answers possible in the shortest possible time, because without them we are unlikely to be able to search for answers to the further questions (who-with whom?).

In this study, I will examine the "when?", the time dimension, which is a key question in almost all criminal cases, I do this without any hope of complete processing of this topic[4]. My train of thought begins with the word "crime-chaser" (law enforcer or investigator in Hungarian). Unfortunately, this already shows that the investigator is constantly following, chasing after events or occasionally dashing after them.[5] He is at a time-line disadvantage to the criminal in the performance of his terribly difficult task. His behaviour is always an afterthought.

The detective is forced to look to the past. The reconstruction of an event in a timeline that no longer exists is demanded of him by his own discipline, his leader, his supervisor, the prosecution that oversees ("directs") the investigation. Ultimately, the court evaluating the facts and the related evidence that looks into the past.

The time dimension of an architect can seem enviable in the eyes of an investigator. Given an empty plot of land which he has to create a house, palace, museum, theatre, bridge, road, etc. on[6] for the future in the present. Who has an easier job? Both need imagination and the ability to create images. Think of the hypotheses and versions (anything absurd can happen in life). It is not easy to see the past because it has already past, and for the architect the invisible future that has never been realised. The quality of the engineering work will be given by the stability of the building. The investigator is judged on the solidity of the facts and evidence he has revealed, which becomes relevant in court.

When processing the time aspect, another theoretical question can be raised: can the past be seen? After all, the fate, the

1 Jenő Cholnoky called geography the "Golden Bridge", using the analogy of the Balaton, because he believed it was a natural link between the natural and social sciences. This is how I see the function of criminology on an almost artistic level. It is a discipline that combines and uses the ever-expanding achievements and research results of the two major scientific disciplines to great effect. Cholnoky Jenő: Önéletírása. (Selfiography) Pesti Kalligram, Művészetek Háza, Veszprém, 2021. 317.

2 Csaba Fenyvesi: A kriminalisztika piramismodelljének második változata. (Second version of criminalistical pyramid model) *Belügyi Szemle,* 2014/9. 32–43.

3 In my view, this statement applies to non-criminal facts, i.e. to all areas and branches of the legal profession of law.

4 I think a similar analysis can be done for all the main questions. Because, as I put it, after (or in parallel with) the (WHAT?) the relevant questions are WHERE?, HOW? and of course the perpetrator(s) (WHO?) and their motivation and purpose.

5 Only in crime prevention is there a pre-action, in time a prior act of authority, a proactive behaviour as opposed to a reactive one.

6 Of course, in the architect's job, you may also have to rebuild an old building, in which case you may need to know the past. This is a rare case.

freedom, and the lives of people in some countries depend on it. If the answer to this philosophical question were to be no, then I can safely say that criminal justice (and the science of criminology) would not make much sense. The theoretical, principled scientific answer is therefore: the past can be known however, we may have limited vision. Looking into the past is only possible though, through distorting mirrors. Take for example the mass of erring, mistaken witnesses whether during the confession procedure or at the point of confession. The margins of error, methodological weaknesses and uncertainties in expert opinions, not to mention the often deliberate misleading behaviour and testimony of the accused, often alter circumstances of evidence attempts in order to gain an admission.[7]

Which is the co-discipline, the co-study that examines the past? In the short term (centuries, millennia), archaeology; in the longer term (millions of years), palaeontology. What are the consequences if they are wrong in answering the question of when? There is almost no serious disadvantage to anyone. But, a forensic scientist's mistake can be fatal for some individuals or groups. It does not matter when the crime was committed and how it was recorded. A wrong finding can often lead to a miscarriage of justice: the authorities wrongly declare that the accused could have been present or was present/attending/residing at the scene of the crime. When in fact he was not there at the time the crime was committed.[8]

In what time dimension does the doctor who also assists the criminologist work? He examines the patient in the present. He diagnoses. He tries to find out what caused the present situation in the past. And after the diagnosis, he proposes a treatment for sometimes in the future. The forensic scientist tries to deduce the history from the data of the present time field inspection (traces, material remains, electronic data, documents), and witness statements. The detective's therapy is the investigation itself and, ultimately, assists the judicial system. The term "reconstructing the past" is used in Anglo-Saxon literature[9] and it is apt in terms of rebuilding the past, to see it again in the present. When an antique vase breaks, its colourful pieces are scattered across the floor. Archaeologists try to put the pieces of the mosaic back together. Investigators do the same. First, they work to find the (relevant) pieces that match the vase (for example, in an inspection). Only the puzzle pieces that belong to the original ornament survive the filtering system. Any pieces that do not fit must fall through the hole in the grate. And then they have to find their proper place in the puzzle. Only the completely rebuilt, reconstructed vase may be taken to court. The past, completely reconstructed from the pieces that surely belong there, complete and intact. If there are cracks, gaps, time gaps, for example, the past will not be appropriately or accurately reconstructed. For the court there is, of course, both the right and the duty of the 'escape route'. A fact that is undoubtedly not proven cannot be assessed against the accused. The in dubio pro reo does not allow for prosecution, the court that has the final say in the endgame of the criminal chess game, to give inaccurate answers to the seven basic questions, including the question: "WHEN?".[10]

How far into the past should the criminal investigator look? The law gives the answer: until the statute of limitations. (The murder of the Pécs Palahegy murderer in 1974 can no longer be investigated by investigative methods, because there is no criminal law framework for it, the perpetrator is no longer punishable.[11]) Some crimes are never statute-barred. They must always be observed, they cannot be forgotten.

Does the ability to see in the distance increase? Is the sharpness of images of the past improving today? The answer is a resounding yes. The ability to 'see into the distance', to 'sharpen' distant images, is a constant desire and requirement for the science of forensic science. The methodology and tools of forensic science meet this requirement. I argue that the closer the past image, the more distant the dream of a perfect crime without a trace becomes. I cite the Ötzi case as an example. In 1991, in a glacier in the Austrian-Italian Alps, the remains, skeleton, clothing and utensils of the man 'Ötzi', named after the place where he was located, were found preserved in a cool and relatively intact state. It is precisely with the tools used in forensic methodology, with expert methods of fact-finding, that they have been examined on several occasions over the last 20 years by various teams of experts. Each time we have learned more and more about him. First of all, the man, who died aged 45-46, had been lying in his natural grave for 5,300 years, led a hunting lifestyle, grew to 159 centimetres, weighed 40 kilos – with gallstones, joints and good teeth – and fed on cereal grains and deer and goat meat. Finally, we can also talk about a possible criminal case: the message from the remains of the substances is that he was killed, shot with an arrow in the back. At the second major examination, they found the fatal arrowhead fragment – "ineradicable" – on his back, firmly and deeply embedded in the skeleton.

After 5,300 years of occult research and answering criminological questions, the case of Jack the Ripper, who killed at

7 Here I emphasise that it is not by accident that I have used the word 'attempt' in both reconstruction and recognition. Indeed, in the course of my seven years of academic research, which ended in 2021, I have come to the conclusion that the current name for the dual – criminological and criminal procedural – presentation of recognition itself may be suggestive, or even influential. The word "presentation' in itself encourages the person who has to make a confession, most often the witness of a crime victim, and who is often seeking to satisfy the authorities, to choose between the persons presented (objects, sounds, photographs, video recordings, etc.). Make sure you choose! And the compulsion to comply can take a dangerously justicidal turn.

I also suggest the word 'experiment' because recognition is often situational. The circumstances must then be adapted to the criminal situation. As in the case of an attempt at proof, the aim here must be to make the crime as similar as possible to the original situation, since only then can the authorities check whether the face, movements, clothing, etc. of the perpetrator can be recognised or made out at all. See in more detail the author's Comparison of the recognition attempt with other acts of evidence. *Magyar Rendészet,* 2021/3. 43–56.

8 The Mór bank robbery, which left eight people dead, took place around 12 noon on 9 May 2002. At the time, Ede K., who is serving a life sentence, was in Budapest and nowhere near the scene. See more details: Lajos Kovács: *A MÓR megtette… (The Moor has done it)* Budapest, Korona, 2009.

9 James W. Osterburg – Richard H. Ward: *Criminal Investigation: A method for reconstructing the past*. Anderson, Chicago, 1998, illetve (6th ed.) LexisNexis, Anderson Publishing, New Providence, NJ, 2010.

10 Viktor Bérces: *A büntetőeljárás reformja és a bizonyítás alapkérdései.* (Reform of criminal procedre and basic questions of proofing.) Budapest, ELTE Eötvös Kiadó, 2021. 91–93.

11 Csaba Fenyvesi: Az 1974-es pécsi palahegyi emberölés kriminalisztikai fordulatai. (Criminalistical turnings of Palahegy murder case in 1974), *Belügyi Szemle,* 2020/ 4. 89–96.

least six London prostitutes between 1883 and 1886, seems particularly close. In 2000-2002, an American forensic laboratory manager conducted an investigation with the help of his colleagues, and during the two years of data collection he was able to gather more data and evidence, which, using 21st century techniques, also allowed for identification. He collected letters allegedly written by the Ripper and examined the saliva content of the stamps on them. He did this 120 years after the original events[12]. The fragments of "partisan" material, offered mitochondrial identification content. In six cases, they were found to match the DNA content of the saliva of an English painter who was alive at the time. The famous artist's correspondence has also been preserved in art history, so there was plenty of comparable stamp fibre. In addition, the research revealed several other indicia and group identification results, including, for example, the watermarks on the papers of the two types of correspondence were identical, as were the written characters.[13]Successes in detecting homicides committed twenty years ago are no longer rare anywhere in the world. Countless examples could be cited from all over the world, but instead I will simply point out that the horizons have grown, the tools of forensic science are becoming ever more far-reaching and ever more sharply focused.

One might ask: what is the reason for this sharpening of the image, this increase in the ability to look into the past?

In my view, it is above all the almost daily increase in the efficiency of the tools of forensic technology. The tools and techniques developed by the basic sciences and by forensic science itself are such that an increasingly accurate picture is emerging, even at a distance.[14] We can see better in all directions. The sky (space), land and water are becoming more transparent, more familiar. The sky and space are explored by telescopes, satellites,[15] planes, helicopters; the land by aerial photography, satellites and ground-penetrating radar, magnetometers,[16] drones; the water by divers and water probes. With these and similar tools, the forensic scientist collects and searches for relevant data, objects, micro- and sub-micro (nano) material residues and traces in increasingly varied and refined forms.

The truly relevant data in real crime cases include the answer to the question "when did it happen?". In other words, to determine the time of the crime, and to define the time of the crime as precisely as possible. But it is not only a specific date, but also the duration that can be decisive. As well as the chronology of events.

It is not uncommon for the correct definition of the time of the offence to be a clue, to the discovery of the perpetrator. Then there could only have been one person at the scene, no other potential suspect. If you know the detection of a fixed time/period many more persons of interest could be ruled out. They may have alibis that can be checked and verified.

In 1989, a four-year-old girl was brutally murdered in Komlo. To be precise, she disappeared between 17.15 and 17.30 on 15 September (Friday). The later medical expert opinion also put the execution on the evening of that day. The young man, who was quickly in sight, produced ten suspects (indices), lived nearby and had hostile feelings towards the victim, but still fell through the system. He was not in Komlo at the time, but on a train to Budapest. He was able to present his train ticket and the conductor he had called as a witness, remembered the passenger, who had been on the express at the time.[17]

The court also acquitted a middle-aged man accused of armed robbery in the lottery shop in Alkotmány Street, Pécs, between 8.10-15 am on 19 July 2005. He was captured at the car showroom on the other side of town. He took his car to the garage, where, according to the clock and video camera, he arrived at 8.24 am. After walking out of the lottery shop at 8.15 am and hurrying to his car, parked behind a convenience store across the road, there was no time to cover the eight kilometres or so of the city. This was measured by the police and the charged defender in their car. It was not possible for the accused to have been at the scene of the offence at 8.15 am.

I note here that in time-based proof experiments, it is the negative result that is really valuable. The positive only gives possibility, not certainty. Also acquitted was the case of a homicide in a village in Baranya, in which the authorities (including the court) used an attempt to model that the young accused man, who was agile, could have run under the gardens to the scene of the crime at the time of the crime after he had got off the bus in the middle of the village. This alone was insufficient to convict the accused as there was no other evidence.

The authorities closed the investigation in which they tried to establish that the suspect could not have reached the Tettye district of Pécs from his apartment in Pécs-Vasas, 11 kilometres from the crime scene, at the time of the crime. After getting up in the morning, he switched on his computer. No one else could have done so in the locked room. This told the

12 For more on this, see Patricia Cornwell: Portrait of a Killer. The case of Jack the Ripper is closed. New York, Berkley Books, 2002.

13 From which it is not reasonable to conclude that painter Walter Sickert committed the mutilation murders, but only that he wrote mocking Jack the Ripper-signed letters to the police.

14 Some examples of state-of-the-art instruments and methods: scanning electron microscopy, chromatography TLC (drugs, dyes, inks, etc.) GC (blood alcohol, residues of petroleum products), HPLC (drugs, dyes, etc.)) GC-MS (narcotics), spectrophotometry including FTIR, Raman, UV-VIS (micro)spectrophotometry, isotope mass spectrometry (narcotics), fluorescence capillary electrophoresis, projectile muzzle velocimetry.

15 One forensic example of image sharpening, of overcoming distances in space, is the Russian satellite image obtained in the O.J. Simpson case, which in the 1994 Los Angeles double homicide case showed a photograph of the defendant's vehicle in front of the victim's house at the time of the crime.

16 The ground penetrating radar sends a short electromagnetic pulse into the ground and, if an object is there, it gives off a distinctive reflection, which is detected by the instrument and displayed on a monitor showing the pattern of the pulses. There is also a technique called lidar (Light Detection and Ranging), which emits pulses of laser into a target area and measures the arrival time of the pulses reflected from the target.

The magnetometer is held at a specific distance from the soil surface, thus recording the magnetic variations of the iron-rich soil. If, for example, a buried body is lying in a particular part of the soil, there will be fewer iron particles than in the surrounding area.

With a soil resistivity meter, the user penetrates the soil with two probes, passes an electric current between them and measures the resistance. This is lower in wet soil than in the dry, stony part, given that water is an excellent conductor of electricity. It is useful for searching graves, as the resistance of the soil around the grave is lower because there is more moisture. However, it can also be the opposite, i.e. too high if the grave has been filled with stones by the perpetrators or if the body has been hidden in some kind of tightly sealing material such as plastic bags.

17 Csaba Fenyvesi – Ferenc Kodba: Kisgyermek sérelmére elkövetett brutális emberölés nyomozása. (Investigation of brutal child homicide case) *Belügyi Szemle*,1990/4. 106–113.

investigators when he was definitely at home. From there, he could not have arrived at the scene of the crime at the time of the crime either by running, cycling or immediately calling a taxi (or other car). It was physically impossible.[18]

In the 1986 manslaughter case against János Magda, a time and duration investigation of several acts was carried out at the scene with the help of witnesses who had been interviewed earlier. Anomalies, errors in recollections and contradictions between individual statements and reality were quickly revealed.[19]

The passage of time does not favour the investigation. The passing of time (tempus fugit) erodes both physical and memory traces. The Ebbinghaus curve, well known in the literature, is also evident in the case of identity parades. In my latest research, completed in 2021, I discovered the following time-related errors.

a)In the case of recognition of missing objects and photographs, failure to draw attention to the fact that: after time, the perpetrator's appearance (hair colour, hair length, hair shape, facial hair, skin) may have changed or may look slightly different in the photographs.

b) Unjustified delays in identification (fading of witnesses' memories.)

c) The personal identification was carried out ahead of time, when the person to be identified could not have had any knowledge of the fact that he or she was under investigation.

d) The "red flags" of (eyewitness) testimonies were not taken into account or not noticed by the authorities. Such warning signs may include information indicating that the witness's memory, ability to anticipate and recall, or intentions may be wrong (influenced). For example: the perpetrator may have been observed by the recogniser for a very short period of time and in poor visibility conditions (very little opportunity to observe).[20]

The investigator's experience of homicide investigations is that the first few months must yield results. It is not possible to give a fixed time span in general, but if the first three months do not yield results, the "deadlock" is an ominous reality. It is said that the greatest policeman in such cases is chance. And the eternal French saying cherchez la femme, or look for the woman! After being beaten up again by the man (despite his pious vows and oath), the perpetrator's partner revealed to the police the terrible crime of Oszkár Nyéki.[21]

An example of a (lucky) coincidence is the 2002 prostitute murder in Pécs, which came to a dead end after nearly three months. The period of monitoring the phone stolen from the victim was almost over when the device signalled that it had been activated. This led to a search for the perpetrator, who was later sentenced to 14 years in prison.[22]

Timing is also worth mentioning in relation to time aspect. Especially in the field of criminal tactics. Just think of well (or badly) chosen acts of evidence, concealed devices, realisations, coercive measures (searches, frisking). Acts carried out too early or unjustifiably too late can be fatal to the effectiveness of the investigation and to the unbiased answering of forensic questions.

The term "urgent investigative measures" is not an accident. Because of the "periculum in mora", the risk of delay, certain means must be deployed immediately and in any case as quickly as possible. The first strike (der Erste Angriff in German, First Strike in English) cannot be delayed. In my view, it is a collection of all the primary measures, including data collection, that the authorities take or must take as soon as possible and as quickly as possible after the crime has come to the attention of the investigating authorities, in order to effectively establish the facts and answer the seven basic forensic questions. Professional promptness is also of paramount importance here, because experience in the field of criminology has shown that those who miss the opportunity and chance of a "first strike" have little chance of providing an accurate response later on. The same is true on the positive side: those who take advantage of the "first strike", who are quick and thorough, and who meet the "double pressure"[23] of our modern age (speed and thoroughness at the same time), have a good chance of success in the future. I can also say without any particular risk that a "hot lead" always gives a better chance of finding the relevant data, including the identity of the perpetrator, than a "cold", already "cold", long-established, remote in time and space. And this is also true for the retrieval of "memory traces" in the human psyche. For the closer the human memory is to the event in question, the easier it is to remember and recall it, and conversely, the more distant in time we are from the past event, the more difficult it is to keep an undistorted mirror of events (for example, the more mistakes witnesses make).

The immediacy and speed of the 'first strike' is also a tactical requirement for crime, because it can catch the perpetrator, who may already be in the picture, unawares. He may be stunned and shocked by the speed of the action, confronted with what he has done. The shortness of time does not give him the possibility of a conscious, calm and elaborate defence, and it is much easier to obtain a confession that can be used as direct evidence and is still valuable today.

There is no doubt that the on-site inspection is the key element of the "first strike". We know this from the fact that national and international statistics show that so-called "crime scene crimes" account for around 60-70% of crimes of un-

18 Csaba Fenyvesi – József Orbán: Az elektronikus adat mint a 7-5-1-es kriminalisztikai piramismodell építőköve. (Electronic data as 7-5-1 criminalistical pyramid model's building stone.) *Belügyi Szemle,* 2019/2. 45–55.

19 See more details on this – Géza Katona: Még egyszer Magda János bűnügyéről. (One more about Magda János' criminal case) *Belügyi Szemle,* 34. 1986/8. 96–104.

20 Géza Katona: A felismerésre bemutatások hibái. (Failures of identity parade.) *Iustum Aequum Salutare,* 17. 2021/ 4. 25–39.

21 See in more detail Csaba Fenyvesi: Masni a szilvafa árnyékában. Az utolsó baranyai halálra ítélt ügyének kriminalisztikai tanulságai. (Bow in the plumtree's shadow. Criminalistical lessons of the last death sentenced man in Baranya county.) *Belügyi Szemle,* 71. 2023/4. 625–635.

22 Csaba Fenyvesi: Védőügyvédi tanulság egy emberölés nyomán. (Conclusions from a homicide case for the defence counsels.) Ügyvédek Lapja, 2022/6. 38-41.

23 In addition to the duo of speed and thoroughness, we can also speak of several „double pressures" in forensics. Thus, they form occasional 'pairs': planned and improvised, legalistic and result-centric, and the requirement of objectivity is pitted against the investigation, imagination and intuition of subjective individuals, while, on a slightly broader scale, there is a tension between increasing crime, more skilful criminality and the strengthening of the rights of the accused.

known perpetrators. Where it is worthwhile to carry out a site inspection, where there is something to look for, to search for, to "comb", where the building blocks, the traces and material remains, which I have already indicated in my above-mentioned pyramid of identification, can be found. Primary crime scene investigation is a priority for forensic scientists all over the world, because everywhere – whether on the European continent or in the Anglo-Saxon states, including Australia, as well as in Asian countries – the crime scene is a "repository of data", an "open book to be read". In my view, there is no such thing as a site free of traces or material remains, it is just a matter of finding and exploring the often invisible changes[24] left behind (with appropriate interpretations and meanings.) I mention here that equally valuable are the so-called "negative traces",[25] i.e. what is not there and should be there, or what is not there and was there. In many cases, the non-existent, missing trace says more than the present one.

Finally, the dynamics of the on-site inspection must not obscure the requirement for parallelism. In other words, as soon as there is sufficient data for a conditional explanation of the past, for the construction of a version or versions, data collection in the other direction must begin. I can also say that the other important component of the "first strike", which I consider to be the most important, the so-called "hot pursuit", coordinated (not specified here) actions should be taken. These give substance to the principle and practical requirement that coordinated steps be taken by the commanding officer and his team of 3-100 people – as soon as possible after the crime has been committed – to gather evidence and apprehend the perpetrator. When the "lead" is still "hot".

To summarise: it is necessary to carry out a rapid search for traces and material remains at a level (material or memorabilia) that will stand the test of time, from the laboratory to the courtroom. ("From crime scene to the courtroom.") In a rational time – frame, all tactical and technical means available at the time and place must be used to achieve this, based on the results of the natural and social sciences as well as forensic science.

24 The American tactics suggestion warrns against the forensic scientist starting the field evidence collection with high and imagined expectations. "A good evidence collector will not approach a scene with a predetermined expectation or what can be found." Peter Moore: *The Forensic Handbook*. New York, Barnes and Noble, 2004. 34.

25 János Dobos: Negatív körülmények a helyszínen. (Negative circumstances on the crime scene.) *Belügyi Szemle,* 1964/1. 54–59.