

THE PRESENT AND THE FUTURE OF FORENSIC IDENTIFICATION

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„Perception of the connection and agreement, or disagreement and repugnancy, of any of our ideas. In this alone consists”

(John Locke)

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S u m m a r y

The most important challenge of the science of criminal investigation is the concrete identification of persons, subjects, scenes and actions, possibly connected to the crime. At the beginning, as bases for the identification served only the testimonies of the witnesses and the traces visible to the naked eye and fixed at the scene. As a result of the revolutionary development of natural sciences, the circle of traces appropriate for being brought under forensic examination has increased, and we can state that this tendency will not slow down in the future.

In the sense of all this, the principle of forensic identification resting upon practical experiment, has also stepped into a new dimension. This short essay makes an effort to survey the existing principles of identification, through studying the existing scientific principles. At the same time it refers to that this development has to answer the circle safety-requirements getting wider nowadays, both within the single special fields and the theoretical thinking.

1. Introduction

The problem of identification and identity is not a new question, as already the philosophers of the ancient times were engaged in the principle of identity (principium identitatis). Starting from the doctrines of the 4th century BC we have become aware of that things (beings) are identical only to themselves. Thus, concerning a subject or a person, only two answers are possible to be given: identical or not identical. This rule includes both the doctrine of uniqueness – a subject can be identical only to itself – and the doctrine of difference – all subjects are different from each other.

The above outlined philosophical theory is valid for the criminal sciences also, as their aim is to establish the personage of the perpetrator and the concrete circumstances of committing a crime. They are to reach this aim through theoretically grounded and professional examinations of the changes occurred owing to the committed crime. The theoretical base of this is provided by the forensic identification, resting on practical methods.

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The history of forensic identification – similarly to forensic science – has a relatively short past, as the inquisitorial criminal procedure system prevailing up to the second half of 19th century did not request a professional discovery of the crimes committed, but it was satisfied with the proofs based on the commission of the suspected gained through torture. This conception was changed following the age of enlightenment, when the investigation actions of criminal procedure became included in the law, the rights of the persons drawn under procedure (the suspected) turned to be respected, and not as last, since then the results of natural sciences have been also employed. This latter factor has become the motivating point of the forensic science of our age, as – in the opinion of Csaba FENYVESI – application of the up-to-date, scientifically grounded means and methods of criminal technology may serve as a base for the suspect more authentically than the criminal tactics, which helps to evaluate proofs of personal nature. Moreover, the investigation at the scene was limited only to some objects (means and results of the crime) and changes (forced up door or human footprint) at the beginning, while nowadays, it covers the discovery of traces invisible for the naked eye (minutiae) as a result of the developing methods serving the discovery of hard evidence.¹

2. The definition of forensic identification

Considering that during the criminal investigation many questions are to be answered related to the finished or the attempted crimes, all such examinations or proceedings are included in the wider definition of forensic identification, the aim of which is identifying a person or subject unknown for the authority. Thus, recognition by the witness is an identifying examination, just like identification of a person or a subject accomplished by a forensic expert. According to this, it can be established that identification has two forms basically, depending on whether the person or subject to be identified is reflected in a memory of an individual or in some kind of material changes. The problems of identifying a picture of memory related to perception belong to the fields searched by forensic tactics, while the identification based on material reflection falls under criminal technology².

2.1. Recognition as criminal tactical identification

In fact, referring to the general definition of criminal tactics, it includes the criminal investigating science taken in a narrower sense. Thus, it covers those investigating methods (interrogation at the scene, interrogation, house search), and evidence procedures (confrontation, investigation at the scene, introducing for recognition, re-enactment), with the help of which the delict in issue can be reconstructed, and the necessary evidence means (means of hard evidence, confession of the defendant or testimony of the witness) can be ensured. The criminal tactics can be both subject and means of criminal identification, whereas, on the one hand, while applying the tactical methods correctly further subjects for evidence (however, of technical character) can emerge, on the other hand, the result of the investigating action itself can serve as a proof. The methods, when the witness separates the tool of committing a crime or denotes the person possibly connected to the crime, can be included in the latter circle. These methods, taking into consideration their nature, are based on the recognition of a passably well determinable person (witness), thus this type of identifying process should be more correctly called as recognition within identification.

The base of recognition is the memory, which recalls the features characteristic for the person or subject in issue. Remembering is easier if the issue to be recalled has individual identifying features, while it is harder if its features are hardly distinguishable from the ones of the other similar objects.

2.2. Forensic identification

The examinations, covering such traces and remains from material which refer to the carrier or the host of the given trace, have basically different character. These traces and changes can be

¹ Co. Csaba Fenyvesi: A XXI. századi bűnüldözés-tudomány nemzetközi tendenciái. In: Magyar Tudomány, 2004/6. sz. 757. p

² Co. Imre Kertész: A tárgyi bizonyítékok elmélete a büntetőeljárás jog és a kriminalisztika tudományában. KJK Kiadó. Budapest, 1972. 318. p.

analysed only possessing special expert, thus the examinations of this type should expediently called forensic identification.

The task of forensic identification is to determine the person or the subject leaving the trace concretely, and in order to this, to elaborate such scientific methods, which are suitable for searching and analysing separately the outer signs referring to the features of the person or subject probably connected to the crime, or the material remains referring to its inner structure.

3. Theoretical basis of forensic identification

3.1. The principle of individuality and the relative durability

The most significant base of forensic identification – according to the philosophical thoughts above – is the principle of individuality and relative durability.

According to the principle of individuality every existing being can be identical only to itself (person or subject), as there are no two persons or subjects completely alike in the nature. Thus, forensic identification never intends to establish the sameness of two issues – since it is not possible – but always to identify one thing, the individuality of which can be established by the traces left behind by it. This way, the identification can be accomplished indirectly, through analysing traces and samples.

In case of subjects, one segment of individuality is the principle of relative durability, as the uniformity of the subjects to themselves can be considered only from a special point of view. The relatively permanent (durable) nature of a subject means the ability to stay passably unchanged in its main characteristics during the time necessary for identifying it. The more durable a subject, and the less the time at disposal for the analysis, it is the easier to answer the question of identity. If, conversely, the given subject is not permanent, such as its main features are changing during the time of identification, the question of sameness cannot be answered even in case if the necessary expert exists.

3.2. The principle of reflection (discoverability) of traces¹

With respect to the fact that the identifying examinations cover mostly traces or remains from material left behind indirectly, the elaboration of those procedures which can discover these traces is an important point of view. Inasmuch there are no such traces in the given crime, or they are not possible to be discovered, the forensic identification can not be successful.

Forensic traces can be of two types from the point of view of identification:

- physical (tracological) changes, occurred as a result of interaction of the single subjects during committing the crime, or
- material remains referring to the inner features of a natural person.

The discovery of forensic traces requires the application of both the methods and evidential procedures of forensic tactics, and the means and examinations of criminal technology. Criminal tactics (interrogation at the scene, investigation at scene, house search) is necessary for a methodical search and fixing of the traces left behind, while criminal techniques are required for analysing the changes, traces and material remains recorded as proofs. As it is observable from all this, the two methods cannot be successful without each other, as the most developed techniques are ineffective if the discovery is not successful or it is erratic, likewise, the professional fixing of traces is not necessary if its results cannot be analysed!

4. Factors and methods of the forensic identifying examinations

The identifying examinations are usually accomplished indirectly, through a collation of the traces found at the scene and the samples taken by the authority. Forensic identification derives always from one trace, which is examined with applying a method requiring special expert (identifying examination), through a comparison of the sample referring to the object (person or subject) to be

¹ Its other name is principle of elementary reflection. Co. Flórián Tremmel – Csaba Fenyvesi – Csongor Herke. Kriminológia. Tankönyv és Atlasz. Dialóg Campus. Budapest – Pécs, 2004. 285. p.

examined. This way, it can be stated as a general principle that identification is usually accomplished not through a direct comparison of the subject to be examined and the trace fixed¹, but it is concluded with the help of samples, such as indirectly.

4.1. The trace as an initial factor

As it has already been referred when the theoretical ground of forensic identification was mentioned, the first act of identification is the discovery and the fixing of the traces possibly connected to the crime (changes, material remains). When executing this, it is a basic requirement that the person accomplishing his job at the scene was applying the necessary methods at the appropriate time. This way e.g. the fixing of odour traces cannot be anticipated by the search of hard evidence, and the discovery of biological material remains cannot be executed as the last act of the criminal investigation at the scene. The professional fixing of the discovered traces is also regulated by special rules, as there is nothing to do with a trace, injured or stained during the fixing.

4.2. The subject to be identified and the sample

The identification is fulfilled completely if the authority – when obtaining all other information about the crime – can survey the circle of the searched persons or subjects. The information referring to them can be originated from concrete suspect (e.g. if the witness recognises the perpetrator, or from house search) but it can be based on preliminary data collection executed by the authority. This latter is helped by the criminal registrations and data bases (modus operandi), in which the means of previous crimes or information regarding the personage of the perpetrator are included (fingerprint, DNA).

Later examination of the personage of the suspect or the subject possibly connected to the crime is concluded by the authority with the help of samples, fixed under artificial circumstances. The identifying examination itself can be executed with fingerprints, DNA-, blood- or odour samples taken from the person, or with subjects in the possession of the authority (in case of firearm through a trial shot).

If the trace fixed at the scene of the crime cannot be brought in relation with a concrete person or subject, then it is to be compared with traces of an other crime. The result of such an examination can be successful only indirectly, as in case of crime serial it is enough to identify a trace fixed at one of the scenes to the ones of the later criminal acts.

4.3. The identifying examination

The concrete process of forensic identification is the examination, which is accomplished through a comparison of the trace and the sample. Its aim is establishing the sameness or difference of the two examined traces.

The identifying examinations deserved a special attention already at the first period of the criminal sciences. Alphonse Bertillon, the founder of the school of criminal anthropometry studied the handwriting of captain Alfred Dreyfuss, charged with capital treason, with the help of a magnifying glass although as it was cleared later, unsuccessfully. Hans Gross, who is called as a father of modern forensic sciences described the possibility of establishing an object making traces in connection with an examination of traces from tools.²

Execution of identifying examinations nowadays cannot be imagined without modern techniques and results of sciences. The analysis of tools is accomplished with the help of special microscopes, comparing the traces from different means (especially firearms and ammunition), while the comparison of human individual features (handwriting, fingerprint, DNA is supported by electronic

¹ An exception from this is the criminal tactical identification or recognition, during which the witness is studying persons, subjects, or in some special cases scenes, introduced directly to him in order to recognise them. Earlier the identification of human odours was accomplished the same way, when the dog executing the separation of the given odour compared the trace fixed at the scene not with a sample originating from the suspect, but with the smell of the suspect itself. This type of examination was closed down because of humane reasons, and nowadays the identification of odours is accomplished through sample comparison.

See more detailed: Zoltán Hautzinger: Forensic identification of human scents. In: Emlékkönyv Vargha László egyetemi tanár születésének 90. évfordulójára. Pécs, 2003. 79 – 89. p.

² Co. Géza Katona: A nyomok azonosítási vizsgálata a büntetőeljárásban. KJK Kiadó. Budapest, 1965. 90. p.

data bases. The old method is applied only in case of odour identification, as the odour separating ability of dogs could not be replaced yet.

5. The results of identification

5.1. The expertise

The results of the forensic identification can be evaluated following the examination of the expert or having the criminal procedure closed down. With respect to that in the continental criminal procedures there is no expert judge (*iudex facti*)¹, the first result of the identification is always an opinion which gives answer only to the question whether the identity of the sources of the two traces is probable or it is excluded.

The opinion of the expert is documented related to his conviction about the identity with the searched subject. In accordance with this, the evaluation of the expertise can be categorical, probable or possible.

5.1.1. The categorical opinion

An opinion is categorical, if the expert is convicted in the competency of the accomplished examination and the authenticity of its result, on the grounds of which the traces fixed at the scene of the crime and the sample provided by the authority are originated from the same person or subject. The categorical opinion gives answer to the questions of competency concerning discovery and fixing of the traces, circumstances of the analysing test and origin of the sample, likewise the results grounded on all this.

5.1.2. The opinion of probability and possibility

If there is any doubtful element in the precedents of forensic identification (trace discovery, fixing, transport, sample providing), in its process or in the conclusion itself, then the expertise can be probable or possible, depending on the degree of doubt.

An expertise is probable, if the identification does not result in a categorical statement, but related to the expert's experience or results of similar previous examinations, the balance of arguments pro and contra can be turned from one side to the other with a good chance. Such an opinion is to be considered watchfully by the expert, because if he cannot take up a position in favour of one of the sides, then the expertise can be only possible, although it does not have significance during the evidence (according to the principle of *in dubio pro reo*).

5.2. Establishing identity

It can generally be stated that the articles on forensic identification employ the expressions of identification and identity as synonyms. From our point of view we do not agree with this, as in criminal cases the identification as examination is to be definitely separated from the identity as a consequence. It is indisputable that the establishment of identity cannot exist without accomplishing the identification. However, it is true that the result of the examinations – even in case of a categorical expertise – does not mean automatically the acceptance or exclusion of sameness. It is grounded mainly on that the expert takes part in a case not as a judge (*iudex facti*), but as a witness, thus his opinion is not a decisive resolution but means of evidence. As a conclusion from this, the establishment of identity or difference is the right of the criminal judge, who passes decision in his final resolution based not only on the expert's opinion, but after having all the other proofs evaluated as well.

¹ See more detailed: Csaba Fenyvesi – Csongor Herke – Flórián Tremmel: Új magyar büntetőeljárás. Dialóg Campus Kiadó. Budapest-Pécs, 2004. 260. p.

6. Instead of summary: the future of forensic identification

The basic factors of forensic identification continuously make the achievements of modern technological development possible to be applied, which can be imagined in directions as follows¹:

- increasing the sensitivity of optical appliances;
- making instrumental and laser examinations more up-to-date in order to check the surface of the carriers of traces;
- developing shape-recognising and stereo-observing systems;
- developing and applying the existing data bases in a wider range (DNA, AFIS, some traces from tools etc.);
- placing instrumental techniques into foreground when analysing odour.

Although this short list could mean a huge development in the field of criminal sciences, the significant fact, that criminal tactical methods are not to be replaced by the development of criminal techniques, cannot be ignored. From the point of view of discovery and fixing of traces the principles and practices of investigation stay always important; but the new achievements of sciences are to be included continuously. Whereas, who could have ever thought one century before that the human DNA could be used for criminal investigation, or the handwriting could be placed in electronic data bases.



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Teismo identifikacijos dabartis ir ateitis

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SANTRAUKA

Straipsnyje apžvelgiamos teismo identifikacijos klausimo problemos. Identifikacijos ir tapatybės nustatymo problema nėra naujas klausimas, jau antikinių laikų filosofai domėjosi tapatybės nustatymo principu (principium identitatis). Pradedant IV a. prieš Kr. doktrinomis mes sužinojome, kad daiktai (būtybės) yra identiški tik patys sau. Beje, dėl subjekto arba asmens galimi tik du atsakymai: identiškas arba neidentiškas. Ši

¹ Co. A kriminalisztikai azonosítás alapvető tételei. In. Kriminalisztika 1. (edited by Endre Bócz). BM Kiadó. Budapest, 2004. 77. p

taisyklė apima taip pat unikalumo doktriną – subjektas gali būti identiškas tik pats sau – ir skirtingumo doktriną – visi subjektai yra skirtingi.

Anksčiau pateikta filosofinė teorija tinka ir kriminalinės justicijos mokslams, nes jų tikslas – nustatyti nusikaltėlio tapatybę ir konkrečias padaryto nusikaltimo aplinkybes. Šie mokslai siekia savo tikslo pasitelkiant teorinius pagrindimus ir profesionalias ekspertizes, atliekamas pagal tuos pakitimus, kuriuos sukėlė padarytas nusikaltimas. Teorinė to bazė yra grindžiama teismo identifikacija, paremta praktiniais metodais.

Teismo identifikacijos, panašiai kaip kriminalistikos mokslo, istorija palyginti trumpa – paplito XIX a. antroje pusėje. Ankstesnė procedūra nereikalaudavo pagrįsti profesionaliai atskleistą nusikalstamą veiką, o tenkindavosi įrodymais, paremtais įtariamojo kankinimais. Tokia koncepcija buvo pakeista XVIII a. pabaigoje, kai įtariamojo teisės tapo gerbiamos, taip pat kai tyrimui buvo pasitelkti gamtos mokslų laimėjimai. Pastarasis veiksnys tapo XX a. teismo mokslų atspirties tašku, gamtos mokslų laimėjimų pritaikymas moksliskai pagrindė kriminalistikos technikos metodų bei priemonių panaudojimą kaltininkui susekti.

Straipsnyje parodoma milžiniška kriminalinės justicijos mokslų pažanga, patvirtinamas mokslinis faktas, kad kriminalistikos taktikos metodai, tobulėjant kriminalistikos technikos metodams, kardinaliai nesikeičia. Žinoma, naujos pėdsakų suradimo ir fiksavimo metodikos yra labai svarbios, bet nauji laimėjimai į tyrimą turi būti įtraukiami laipsniškai. Kita vertus, kas prieš šimtmetį galėjo pagalvoti, kad žmogaus DNR galės būti naudojama kriminalistiniams tyrimams arba kad žmogaus rašysenos pavyzdžiai galės būti įrašyti į automatizuotą duomenų bazę.

