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## CLASSIC AND MODERN TENDENCIES IN THE MEANING AND SYSTEM OF CRIMINALISTICS

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**Abstract.** The meaning (notion) of criminalistics as a branch of the science is different in our world. Specially different in the Continental and in the Anglo-Saxon (common-law) system. The study shows and analyses the classic and the modern interpretation of criminalistics and forensic sciences. In the second part you can find a conceptual-theoretical modell of the system of criminalistics and its contacts with other (criminal, "cross-section" and social) disciplines.

**Keywords:** common-law, criminalistics, criminology, cross-section, detection, disciplines, forensic sciences, identification, metodology, prevention

## 1. The notion and purpose of criminalistics

Academic literature seems to be uniform in its summary, formulated also below, that criminalistics is, in essence, mainly a practical and – to a smaller extent – theoretical science of criminal investigation, in other words, it is a branch of criminal sciences that explores, creates, systemizes and applies – within normative legal frames - means and methods for the detection (prevention) and proving of crime (BELKIN, BÍRÓ, BÓCZ, FILIPPOV, FINSZTER, GEERDS, KATONA, KERTÉSZ, KIRK, LAKATOS, MOLNÁR J., TREMMEL, VISKI¹). Apart from the supplementary role of the effective – indirect and direct – prevention of crime (DICZIG, IRK²), its basic functions comprise detection, obtaining as much and as reliable evidence as possible, providing a basis for and ensuring the ultimate establishment of criminal responsibility by the court. In summary, criminalistics is the science of the effective and professional investigation of crime, which has no subfield, either on the European continent having given birth to it or beyond the borders of Europe, that does not serve the fight against crime, the detection of offenders and their being brought to trial.

Even the expression "criminalistics" is of European origin, since it was first used by GROSS<sup>3</sup> in his basic work of 1893, which was translated in the English language publication as the headword "criminal investigation" and it was used in that form right until the 1950s-1960s, and it is still used today, albeit with a changed content.

In the common-law jurisdictions (Great-Britain, USA, Canada, Australia etc) "criminalistics" as a scientific term relating to the whole branch of science has not become widespread, or it is not to be interpreted in its European meaning. Following the initial "criminal investigation" – through the designations "scientific investigation" (BEVERIDGE, OSTERBURG<sup>4</sup>) and "police science" (PERKINS<sup>5</sup>) – especially from the 1960s (LUDQUIST-CURRY<sup>6</sup>) the terminology of "forensic science" - translated into Hungarian as bűnügyi tudomány=criminal science (or törvényszéki tudomány= court science, or maybe igazságügyi tudomány= judicial science) - has been used. In my view, there is no need to find a Hungarian translation for this term, since the attribute "forensic= forenzikus" can serve as a solution that may be accepted internationally as well. (KÁRMÁN<sup>7</sup>) Therefore, in my opinion, the term "forenzikus tudomány" as the Hungarian expression for the common law terminology (forensic science) is simply a Hungarianized equivalent, its attributive form is adequately expressive and it is becoming more and more accepted.

On the other hand, today, in my view, forensic science as a technical term of American origin based on the common law conception ("forensic science"-NICKOLLS<sup>8</sup>), as a matter of fact, exhibits the content of continental crime-solving techniques, while the elements of crime-solving tactics can mainly be detected in criminal psychology (or forensic psychology) and "criminal investigation". Consequently, by scientific investigation of crime ("forensic scientific investigation") or detection of crime ("detection" – CUTHBERT<sup>9</sup>), Anglo-Saxon academic literature means the application of natural scientific methods (WELLS, O'BRIEN-SULLIVAN, FRASER-ROBIN, KIRK, O'HARA, C.-O'HARA, G., SWANSON-CHAMELITO-TERRITO, SAFERSTEIN, RICHARD-WARD, CAMPBELL, HOUCK-SIEGEL, OSTERBURG-WARD<sup>10</sup>). Based on the traditional approach, behind "criminalistics" as a technical term there is only one "branch of forensic science", namely the one that deals specifically with the scientific collection and analysis of physical evidence, especially of traces and material remains found during the inspection of the crime scene.

In recent decades, however, a tendency of some kind of approximation, interplay, unification of content and convergence (even if not with identical forms of expression) has been observable concerning the two conceptions: the continental and common law approaches. Since the 1960s there have been and still are an increasing number of volumes published under the title "criminalistics", drawing nearer to the continental designation. (KEVIN-SULLIVAN, MELOAN-JAMES-SAFERSTEIN, O'BRIEN-SULLIVAN, O'HARA-OSTERBURG, SAFERSTEIN<sup>11</sup>)

One example for this is the Lab Manual volume published in the United States in 2001. Its sub-title ("An introduction to forensic science") refers to forensic science, at the same time the main title is "Criminalistics". (MELOAN-JAMES-SAFERSTEIN, and KEVIN-SULLIVAN, SAFERSTEIN, O'BRIEN-SULLIVAN) As for its content, it provides a detailed analysis of the meticulous methodology relating to the examination of physical evidence based on natural scientific knowledge. A similar conception may be found in the works of several authors, let us mention as an example the case of O'HARA. In two of his basic works, he deals with "Criminalistics" having the nature of criminal techniques and "Criminal investigation" having

the nature of crime-solving tactics (O'HARA, C.-OSTERBURG, O'HARA, C.-O'HARA, G.). In the 2000s, especially in American summary works one may – repeatedly – increasingly encounter the expression "criminal investigation" (SWANSON-CHAMELIN-TERRITÓ, WESTON-LUSHBAUGH<sup>12</sup>), which is also drawing nearer to the continental use of terminology. As for its content, nowadays it covers mainly continental crime-solving tactics and crime-solving methodology. More specifically, it comprises methods of crime scene investigation, line-up or one on one confrontation (USA), or identity parade (England), the interrogation (USA) or questioning (England) of suspects and witness interviews. This category may also include data collection from informants, analyses and other sources (e.g. records, surveillance), the planning, organization, logistics and "management" of investigation (BLOCH-WEIDMAN<sup>13</sup>), modes of search, body-search, seizure, the tactics of arrest, custody, detention, pre-charge detention, preliminary detention, the interpretation of rules of evidence, as well as tactical recommendations, professional "tricks of the trade" applicable to the individual crimes and groups of crime.

Thus, on the whole, the review of content elements leads one to the conclusion that, basically, both approaches divide the field of science designated as criminalistics by us and on the Continent into identical areas. In other words, criminalistics is divided into crime-solving techniques, constituting the forensic part — "forensic science" or "sciences" in the plural with reference to the underlying natural sciences -, and crime-solving tactics based mainly on social scientific knowledge, which is embedded in "criminal investigation" and "criminal psychology" in common law academic literature. Crime-solving methodology focussing on individual crimes is also included in "criminal investigation".

In addition to the above it must be noted that out of the continental countries in France (in Belgium GODDEFROY, LOUWAGE, LECHAT, in Italy OTTOLENGHI, ALTAVILLA<sup>14</sup>) apart from "la criminalistique" (CECCALDI, CHEVET-MARAND, BUQUET<sup>15</sup>), or criminalistics, the knowledge termed as "police scientifique" (ROBINSON, SANNIE<sup>16</sup>) or scientific police, "police judiciaire" (HREBLAY<sup>17</sup>) or judicial police science, or pursuant to LOCARD's "Manuel de technique policière" (LE CLERE<sup>18</sup>), police technique has also been linked to the cultivation of some areas of criminal investigation. Today one encounters the term "criminalistics" again. (CECCALDI, CHEVET-MARAND, FOMBONNE, LOCARD<sup>19</sup>) The university textbook published in Paris in 2001 already bore the main title "Manuel de criminalistique moderne" (Manual of modern criminalistics) and the sub-title "La science et la recherce de la preuve" (The science and research of evidence). (BUQUET<sup>20</sup>)

In Europe in German-speaking countries (e.g. SCHNEICKERT, GROSS-SEELIG, KLEINSCHMIDT, GEERDS, KUBE-STÖRZER-TIMM, BRODAG, CLAGES<sup>21</sup>) and to the east of them, the term "criminalistics" was customary almost everywhere in the past and this is the accepted terminology today as well. (E.g. ALAMOREANU, BELKIN-WINBERG, BÍRÓ, BÓCZ, FILIPPOV, GARAMVÖLGYI, KERTÉSZ, KOBOVAC, KRAJNIK, KRIVOKAPIC, LATIFI, HOLYST, HOROSZOWSKI, MALEVSKI, MAVER, METENKO, MIRCEA, MUSIL, PAPES, PAVISIC-MODLY, POPA, PORADA, SIMONOVIC, STANCU, TREMMEL-FENYVESI-HERKE, VODINELIC-ALEKSIC, ZAMFIRESCU-POPESCU<sup>22</sup>)

At the same time, one may also observe changes in the continental conception, more specifically, phenomena, the adoption and application of terms pointing in the direction of forensics. It is being infiltrated through the cultivation and terminology of the subfields applied in the common law system. As an example of approximation and convergence between the two systems one may mention that the interpretation of evidence, the "show up" model plays an increasing role in the continental approach as well.

It may also be perceived concerning both schools of thought that the underlying basic scientific knowledge is derived from (forensic) biology, chemistry, physics, anthropology, pathology, serology, toxicology, but there are also close links with knowledge in the fields of applied ballistics and photographic technology. In recent decades this circle has been extended to cover, as new fields, molecular genetics, information technology (computer forensic technology, cyber forensics, digital forensics, digital investigation, web-analysis), including for example the computerized analysis of human voice and voice carriers (computer-voice analysis), identification of computer writing and computer printers (printer-identification), forensic archeology, forensic dentistry, modern forensic entomology dealing with insects, modern forensic geology, DNA profiling (DNA analysis), forensic botany and zoology.

As a special technical method one may also mention the analysis of evidence (crime analysis) – operating with the help of crime mapping and geographic profiling (ROSSMO<sup>23</sup>), the application of the mathematics-based Bayes' Theorem in the context of identification analyses, the theory of document analysis (hand- and machine-written documents), images analysis, and analyses for the identification of ridges and edges in skin patterns ("ridgeology"-"edgeology").

Within the range of tactics, one may highlight the knowledge areas of forensic administration-management and logistics, forensic nursing, security management and personality profiling (profile-analysis-TURVEY<sup>24</sup>). As new – a few decades old or even younger – fields in the methodology of individual crimes one may regard, for example, the investigation of accidents caused by design or construction (engineering failures), cases of fire (fire science) and explosions (bombs, explosives and residues).

In summary, it may be concluded that although there are notional differences between the continental and common law conceptions of the science of criminal investigation, their subject-matter and objectives are identical, and their contents are in accordance with each other. As a tendency it may be established that one may witness the gradual demolition of the rigid boundaries between these conceptions, and the present is already characterized by their mutual interaction.

## 2. The system of criminalistics

In accordance with the continental conception, criminalistics may be divided into three parts also in Hungary: a general part consisting of crime-solving techniques and tactics, and crime-solving methodology, which may be regarded as a special part. Apart from the above, the history and theory of criminalistics and crime-solving strategy are also classified under the general part by academic literature, and in my view, crime-solving logistics also belongs here now. (DÉRI, KATONA<sup>25</sup>)

Out of crime-solving techniques and tactics, playing a significant role in the dissertation, crime-solving techniques serve the purpose of the expedient and professional utilization of natural scientific and technical-technological means and methods in the field of the detection and prevention of crime. These means and methods may include any results achieved in other fields and subfields of science that may be used effectively by crime-solving techniques without any change, e.g. physical, chemical instruments, measuring procedures, optical and computer devices, or that may be utilized in criminal investigation following their further development precisely by crime-solving techniques, for example, forensic photography, voice identification, serological analyses. Finally, there are special subfields and disciplines of significance that have been established, elaborated and provided with firm foundations by crime-solving techniques. Such are, for example, criminal traceology, the keeping of records and personal identification based on a system of fingerprints, dactiloscopy, forensic computer analysis of writing and documents, criminal ballistics (HAUTZINGER<sup>26</sup>) or (special) scent identification (by sniffer dogs). (HORVÁTH<sup>27</sup>)

In comparison, criminal tactics concentrates not on information carriers of a physical nature, but rather on the main characteristics and interconnections of the phases of obtaining evidence of a personal nature, connected with defendants, victims and witnesses. It contributes to the effective and efficient execution of investigatory acts also by pointing out sources of danger concerning the origin and obtaining of individual types of evidence and potential shortcomings in the conduct of the body or person carrying out the investigation. On the other hand, with the assistance of forensic computer technology and behavioural science, crime-solving tactics endeavours to harmonize, as required, the requirements relating to the planning, organization, integration and logistics of overt and covert investigation and operations connected with data acquisition and processing.

Crime-solving methodology is traditionally regarded as the third part of criminalistics. In the Anglo-Saxon model, both in England, her environment and the United States, analyses and guides relating to individual offences appear under the headword "criminal investigation". Crime-solving methodology does not deal with the efficient investigation of crime in general, but instead – linking and adapting, as far as possible, basic knowledge derived from crime-solving techniques and tactics – it concentrates directly and specifically on the exploration and proof of individual categories of crime and tactical recommendations relating to them (for example, relating to the investigation of homicide, arson, explosions, burglary.) Basically, crime-solving methodology may also be considered a specialized area of criminalistics which focuses on the typical ways of perpetration of a given type of criminal offence, the potential physical and personal sources of information relating to it and the characteristics of the criminal case in general; it specifies, supplements and modifies general criminal technical and tactical information and tasks as required and links them with different points of emphasis and criteria.

With respect to all of the above, it seems right to divide criminalistics into a general and a special part. The first one includes - apart from crime-solving techniques and tactics, theory and logistics - also crime-solving strategy, which focuses mainly on objectives defined by crime-solving politics, being of a criminological nature. It endeavours to outline a series of comprehensive national, regional or municipal-local measures, which serve both the purpose of crime detection (reactive measures) and that of crime prevention (proactive measures).

As opposed to all this, methodology as the special part – both in Continental Europe and in the Anglo-Saxon territories – comprises the most important and most peculiar technical and tactical potentials, problems, difficulties, troubles and erring factors relating to detection essentially only with regard to individual types of crime.

## 3. Contacts of criminalistics with other disciplines

Criminalistics, as an empirical science of fact, has a wide-ranging system of contacts. (KATONA<sup>28</sup>) Based on my classification, three main groups may be distinguished.

- A) The first group is that of sciences having the closest contacts with criminalistics, which comprises criminal sciences dealing primarily with criminal activity, criminal offences and perpetrators of crime. They include:
  - a) criminal law (normative),
  - b) criminal procedural law (normative),
  - c) criminology (as a factual science),
  - d) victimology (becoming more and more independent, also as a factual science),
  - e) law of penal enforcement (penalogy as a normative science),
  - f) forensic psychology (as a special branch of psychology),
  - g) forensic medicine (including anthropology).
- B) The second significant group of contacts of criminalistics is made up of technical and natural sciences as "cross-section" sciences (KATONA), including in my view in particular:
  - a) biology,
  - b) chemistry,
  - c) physics,
  - d) technical (engineering) sciences,
  - e) mathematics (mathematical logics),
  - f) information science (information theory),
  - g) cybernetics,
  - (h) "bridge or ferry sciences". (KATONA)

C) The third large group of sciences having contacts with criminalistics is made up of the following branches of "intellectual scientific" (GEERDS<sup>29</sup>) social sciences in particular:

- a) philosophy,
- b) psychology,
- c) logics,
- d) sociology,
- e) pedagogy,
- f) statistics,
- g) archaeology,
- h) science of policing.

From the examination of the contacts of criminalistics one may draw the conclusion that from the beginning, the fast development of modern criminalistics was due to the fact that it was increasingly able to adapt to the challenges posed by large-scale criminal activity in major cities caused by urbanization, and it did so within the frames of an interdisciplinary (and at the same time, mutual) transfer of knowledge. This development was assisted by the transplantation of knowledge relating to discoveries and inventions unearthed by medicine (toxicology) at first, then by various other social and natural sciences, as well as through the utilization and sensible adoption of the research results. Meanwhile, criminalistics itself, with its theoretical and practical experts and organizations working professionally and competently as a single group – relying on the results of information science – established and elaborated autonomous branches of knowledge and methodologies, having special regard to the increased demands as well as technical, scientific possibilities. (As an example for this, see traceology, dactiloscopy, ballistics, writing analysis, profiling, polygraph testing or covert means.)

It may be added in summary of the above contacts that criminalistics can be characterized not only as a continuously expanding treasury of indirect evidence obtained and analysed based mainly on natural scientific knowledge, but also as the involvement, integration and transplantation of the most diverse professional knowledge and, in general, of branches of science into the detection of crime. Making use of this diverse special expert knowledge requires above all the employment of experts and consultants. Having regard to this interconnection, it may also be stated that the more knowledge one has of interdisciplinary criminalistics, the more special fields and experts he can make use of in order to detect crime and so he will have a more effective, or more diversified and thorough information base, and he will collect data and obtain evidence more effectively. In my view, all this, in turn, is always focussed on identification.

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