

THE IMPORTANCE OF GENETIC EXPERTISE IN FORENSIC SCIENCE

Gheorghe PINTEALĂ
Andreea RICHARD

Abstract: *Genetics became the ally of the institutions in discovering certain crimes, but it also led to the release of accused persons who were innocent. In addition to all this, we can identify corpses or crimes with unknown authors, can be solved much easier than with classical methods. However there are some controversies regarding genetic databases. There is the question of the violation of fundamental rights in the name of safety.*

Keywords: *Genetics, expertise, victim, database, forensics.*

Introduction

Genetics is the method that has succeeded in revolutionizing forensics, being an essential tool in legal medicine. Initially the method was disputed, due to the fact that the interpretation of results can be a problem for those outside the medical environment. Meanwhile, the big services of the world have invested in laboratories and experts.

The object of expertise¹ is the fact that it requires specialized knowledge.

The material object of forensic expertise is represented by the body of the victim himself. This is the key to investigating, by determining the cause and time of death, examining biological secretions, etc.

The material objects of forensic expertise are those on which traces are found, objects used to commit the offense, firearms, etc.

The forensic expertise is meant to examine comparatively the concrete characteristics of the studied objects in order to establish the identity or belonging of the gender or the common origin, to reveal the material traces of the crime, to establish the conditions and the direct causes that led to their formation, the training mechanism of traces.

1 Cuciurca Angela, Ursu Nicolae, Probleme de metodologie ale expertizei judiciare, (Ciclul II), Ministerul Educației al Republicii Moldova, Universitatea de Studii Europene din Moldova, Facultatea de Drept, Note de curs, Chișinău, 2013, pag. 3-4-12

Forensic expertise has extensive applications in the criminal process, but is also used in the civil process.

Romanian legislation.

According to the Romanian Criminal Procedure Code², the judicial genetic expertise can be ordered, with the approval of the judge of rights and freedoms, by the criminal prosecution body or by the court.

Judicial genetic expertise is carried out within the forensic institutions, an institution or a specialized laboratory or any other specialized institution certified and accredited in this type of analysis³.

Biological samples are saliva samples taken using sterile cotton swabs.

Laboratories perform investigations using internationally approved reagents for person identification, approved test protocols and tailored to the requirements of the case.

Biological material⁴ taken during body examination can only be used to identify the genetic profile, but it can also be used in another ongoing criminal trial in which the person from whom they were taken has the suspect or defendant quality.

The genetic profiles⁵ are kept until the criminal investigation bodies or the courts have their deletion from the database. In case of ordering of the criminal prosecution or, as the case may be, the payment or termination of the criminal proceedings, the deletion of the data shall be made on the basis of the ordinance issued by the prosecutor or, based on the courts decision, with regard to the deletion measure.

In the case of minor offenders⁶ sanctioned by applying educational measures under the new Criminal Code, the court can not order the collection of biological samples for obtaining and storing in the genetic profile in the National Genetic Data System because in the case of juvenile offenders no conviction can be pronounced to deprivation of liberty, to deferment of punishment or to waive punishment. ... The legislator's intention was to establish a database for the National System of Genetic Data, which would serve to prevent and combat certain categories of

2 TITLUL IV: Probele, mijloacele de probă și procedeele probatorii, CAPITOLUL VII: Expertiza, Expertiza genetică judiciară art 191, alin (1).

3 Idem, alin (2).

4 Ibidem alin (3) – (4).

5 Juridice.ro

6 Decizia nr. 5/2016 ÎCCJ, Dosar nr. 6/2016 , Publicat in Monitorul Oficial, Partea I nr. 493 din 01/07/2016

offenses that seriously undermine the fundamental rights and freedoms of individuals, the right to life and physical and mental integrity⁷, as well as for the identification of bodies with unknown identity, missing persons cases or deceased persons following natural disasters, mass accidents, murder or acts of terrorism.

Legislation in the Member States of the European Union

At EU level, Member States regulate the conditions under which the sample is taken, stored and destroyed, and most countries have a database to provide competent authorities with the information they need to combat certain types of crime or to identify people.

The Austrian Criminal Procedure Code⁸ limits the use of genetic data collected from suspects and convicts.

The Croatian Criminal Procedure Code refers in particular to the way samples are collected and preserved, in the time during and after criminal investigations, but also those who have access to the data and under what conditions.

In Denmark⁹, the law regulates how police and other authorities can process data, and through special laws, both Denmark and Estonia have set up database registers.

Hungary¹⁰, in addition to the methods of sampling, storage and destruction, regulates the retention period and the conditions under which it can be shared with other EU countries.

Genetics in forensics.

In 2008, the FBI used genetic expertise in over 400,000 cases, and 350 people who risked being sentenced to death were saved due to it. The database reached 20 million in 2018 among the arrested, of which two-thirds were added in the last 10 years. In 2013, the Supreme Court in Maryland v. King decides that it is permissible to collect DNA samples from persons who are arrested but who have not been charged or convicted of an offense.

7 Legea nr. 76/2008 privind organizarea și funcționarea Sistemului Național de Date Genetice Judiciare, alin(1)

8 Overview of EU National Legislation on Genomics, JRC F7 – Knowledge Health and Consumer Safety, 2018, JRC Science for policy report, European Commission. Pag 15

9 Legea 434 din 31/5/2000

10 Legea LXVI din 1992 privind evidența datelor personale și adresa cetățenilor, consolidată prin Decretul guvernului 146/1993 (X. 26.)

On April 24, 2018, DNA tests revealed that Joseph James DeAngelo, known as The Golden State Killer, a former California policeman, is the main suspect in several murders, rapes, kidnappings, and thefts that had begun since 1974. It changes the way of operating so often and so radically that until 2001 it was thought that they were different people. During investigations, more people have were suspected, but due to DNA samples, they could also be declared innocent.

Also in 2018, Fulton County police arrested a 61-year-old man named Jerry Lee, who on May 25, 1997, murdered Lorrie Ann Smith. After 21 years, using DNA genetics and DNA samples, helped the police to find that he shot her, but because the victim fought back, they could find the bloodstains that belonged to Lee. Interestingly, Lee was a correction officer for the Atlanta Correction Department at the time of Smith's murder.

As in the case of Joseph James DeAngelo, it was much harder to go to classical investigative models because they had a military education and knew how to effectively delete the traces. In 1981 Kirk Odom is arrested for the rape and murder of a woman. The accusations were based on hair compared under the microscope found on an evening dress.

The results lead to the conviction of Odom, and after years of custody, by isolating the DNA is revealed that the method used in 1981 was flawed, and Odom is released.

Conclusions

Without question, genetic expertise is an important element in criminology. However, genetic information is protected in all countries of the world by being considered personal information. However, in recent years serious discussions have emerged regarding the use of genetic information collected from certain agencies. Companies like Ancestry, 23and Me, Dante Labs, Helix, Parabon NanoLabs, specialize in kits based on samples of saliva that can provide genealogy and disease data.

In July 2018, 23andMe decides to recognize that it sells the collected genetic data, including the big pharmaceutical companies. At that time only Ancestry had over 5 million samples in the database.

Obviously, the institutions used the database of these companies, which raised the question of the legality of such a measure.

There is also the question of harvesting these genetic data immediately after birth, and again the question is that of legality, because the newborn obviously can not declare its consent.

Most likely in the future, these genetic data will be part of your personal data, such as birth certificate, identity card, passport, etc.

Although no one denies the advantage of a genetic database, we must think about the future. Science has gone so far as to discover genes that are responsible for criminal behavior. It is the problem of a barely born child who has such a gene. We can not be held accountable for crimes that have not yet occurred. However, what should we do if this child will be a serial killer, rapist, pedophile, etc?

Including the idea that it should be permanently checked to observe the behavior over time and how it evolves can be problematic.

What do you do with a child born in a disadvantaged environment, which tends to affect its behavior and can lead to crime?

Can you take it from his parents' home just because they would not be able to control such a child?

Can we put a specific label on a baby from birth?

The ideal is to manage crime. But in this process, let's not forget about people's rights.

States, through most constitutions, and international organizations, guarantee and justify the right of individuals to freedom, health, dignity, and they have to take precedence over safety measures. It is enough to just damage certain rights, for the situation to become irreversible over time.

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NOTES ON THE AUTHOR

Gheorghe PINTEALĂ, PhD. lecturer at “Dimitrie Cantemir” Christian University Bucharest Faculty of Management in Tourism and Commerce Timișoara, and University “Dragan” Lugoj Romania.