Der Einsatz biometrischer Identifizierung bei der Verbrechensbekämpfung

Lyudmila Yuryevna Yugai

Doktorand an der Fakultät für postgraduale Bildung, der Akademie des MIA der Republik Usbekistan, Doktor der Philosophie (Ph.D.) in Rechtswissenschaften

yugai.lyudmila@mail.ru

Anmerkung: Die Entwicklung der Informationsgesellschaft bestimmt den Übergang der Aktivitäten zur Kriminalitätsbekämpfung auf eine neue Ebene, die die Digitalisierung des Strafverfahrens und die flächendeckende Einführung biometrischer Technologien vorsieht.

Die Arbeit zielt darauf ab, das Konzept der Biometrie zu untersuchen und die Möglichkeiten der Verwendung biometrischer Datenbanken bei der Aufklärung von Straftaten zu ermitteln.

In der Forschung werden Methoden wie Analyse und Synthese, Deduktion und Induktion, logische, rechtsvergleichende Analyse verwendet. Als Ergebnis der Untersuchung der Meinungen von Wissenschaftlern wurde festgestellt, dass die biometrische Identifizierung einen besonderen Platz im System der forensischen Identifizierung einnimmt und ihr Anwendungsbereich über den Rahmen eines Strafverfahrens hinausgeht. Die Arbeit definiert solche Anwendungsbereiche der forensischen biometrischen Identifikation als Personenidentifikation; Feststellung der Tatsache der Begehung bestimmter Verbrechen durch eine Person; Grenzpasskontrolle; externe Kontrolle und Videoüberwachung der Umgebung; Identifizierung nicht identifizierter Leichen; Zugangskontrollsysteme; Migrationskontrolle; Identifizierung gesuchter Personen; Identifizierung von Personen, die aufgrund von Krankheit oder Jugend keine personenbezogenen Daten über sich selbst bereitstellen können.

Es ist ratsam, die Ergebnisse der Studie bei such- und forensischen Aktivitäten sowie bei der Durchführung von Lehrveranstaltungen in Bildungseinrichtungen anzuwenden.

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Im Anschluss an die Studie wurde festgestellt, dass biometrische Technologien die Effizienz der Kriminalitätsaufdeckung verbessern können. Gleichzeitig ist es notwendig, die Fragen der Wahrung der Persönlichkeitsrechte zur Gewährleistung der Sicherheit personenbezogener Daten, die Entwicklung rechtlicher, organisatorischer und methodischer Aspekte zu berücksichtigen.

Schlüsselwörter: Biometrie, biometrische Identifizierung, Identifizierung, Verifizierung, personenbezogene Daten

The use of biometric identification in countering crime

Lyudmila Yuryevna Yugai
Doctoral student at the Faculty of Postgraduate Education, the Academy of the MIA of the Republic of Uzbekistan, Doctor of Philosophy (Ph.D.) in Juridical Sciences
yugai.lyudmila@mail.ru,

Abstract: The development of the information society determines the transition of activities related to combating crime to a new level, providing for the digitalization of criminal proceedings and the widespread introduction of biometric technologies.

The work is aimed at studying the concept of biometrics, determining the possibilities of using biometric databases in solving crimes.

Methods such as analysis and synthesis, deduction and induction, logical, comparative legal analysis are used in the research. As a result of studying the opinions of scientists, it was established that biometric identification has a special place in the system of forensic identification and the scope of its application extends beyond the framework of criminal proceedings. The work defines such spheres of application of forensic biometric identification as identification of persons; establishing the fact of the commission of certain crimes by one person; border passport control; external control and video monitoring of the environment; identification of unidentified corpses; access control systems; migration control;

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identification of wanted persons; identification of persons who cannot provide personal data about themselves due to illness or young age.

It is advisable to apply the results of the study in search and forensic activities, as well as when conducting classes in education institutions.

Following the study, it was determined that biometric technologies can improve the efficiency of crime detection. At the same time, it is necessary to take into account the issues of observance of individual rights to ensure the safety of personal data, the development of legal, organizational and methodological aspects.

Keywords: biometrics, biometric identification, identification, verification, personal data

Introduction. The digital transformation of society and the state all over the world entails the expansion of the use of biometric technologies in all spheres of society. For example, biometrics is widely used in access control systems, banking and notarial activities, the legal sphere, etc. The following biometric parameters are most widely used in personal identification: facial features, papillary lines, voice, etc. Of particular interest are the issues of introducing biometric approaches in the sphere of combating crime.

It should be noted that despite the active use of biometric technologies, at this stage it is still a promising and developing area, which has not yet fully revealed its full potential.

Milan Adamek, Miroslav Matýsek, Petr Neumann[1], Rodrigo de Luis-Garcia, Carlos Alberola-López, Otman Aghzout, Juan Ruiz-Alzola[2], S. Ayeswarya and Jasmine Norman[3], Paweł Krotewicz, Wojciech Sankowski, Piotr Stefan Nowak[4], Raymond T. Moor[5], G.I. Povreznyuk[6], D.Y. Pisarev[7], E.G. Barkovskaya[8] and many other scientists devoted their scientific works to biometric identification issues.

However, their analysis shows that in these works there is no unified concept of the legal nature and essence of biometrics, biometric technology, as well as the corresponding legal support of public relations that will regulate law enforcement

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activities in this sphere.

At the moment, in Uzbekistan, a separate study on the use of biometric technologies in the disclosure and investigation of crimes has not been carried out.

D.Y. Pisarev notes that the biometric doctrine is in the initial stage of its development and does not yet occupy a strong place in legal science, however, a unified approach to the definition of this legal phenomenon has not been formed, which determines the specifics of the study[9].

In the judicial and legal system of the Republic of Uzbekistan, large-scale reforms are being carried out related to the effective implementation of innovative modern technologies in the disclosure and investigation of crimes. In particular, among the main tasks in this sphere are the dynamic development of the forensic-expert activity, the widespread introduction of automated information and search systems and computer programs, electronic databases in forensic-expert institutions.

Today, all over the world and in our country, biometric technologies are widely used in activities to combat crime. New types of biometric databases are being introduced. The normative, technical and legal base of biometric technologies is intensively developing. The state is initiating the formation of uniform standards to ensure the interaction of autonomous biometric systems. However, a single concept of biometrics is still lacking, since its content is still developing.

Initially from the beginning of the 19th century, biometrics was understood as a set of mathematical methods used in biology, as well as techniques for using the most important statistical indicators necessary for primary processing in the analysis of research materials, experiments and analysis of probability theory[10].

We agree with the opinion of E.G. Barkovskaya, who believes that the stage of formation of a new scientific discipline, consisting in creating a conceptual apparatus, streamlining accumulated knowledge, formulating key problems and determining directions for further development, demanded the unification of certain closely related scientific areas into a single discipline[11].

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Scientific and technological progress has led to a change in the content and essence of biometrics and the formation of a separate scientific direction devoted to automated personality identification based on anatomical, behavioral or biological characteristics of a person.

With the development of information technologies, the essence of the concept and the content of biometrics has evolved into a separate scientific direction devoted to automated identification or verification of a person by physiological or behavioral distinctive characteristics.

Biometrics is a synthetic science that brings together achievements in biology, medicine, anthropometry, mathematics, cybernetics, criminalistics and forensic examination.

The Biometric Consortium under the U.S. Government in 1995 defined biometrics as an automated system for recognizing individuals based on their behavioral and biological characteristics[12].

Interstate Standard ISO/IEC 24713-1 – 2013. "Information technology. Biometric profiles for interaction and data exchange" presents under biometrics the automated recognition of a personality based on his behavioral or biological characteristics[13].

Article 26 *"Processing of biometric and genetic data"* of the Law of the Republic of Uzbekistan No. LRU-547 "On personal data" of July 2, 2019, states that *"biometric data is personal data characterizing the anatomical and physiological characteristics of the subject.*

Genetic data is personal data related to the inherited or acquired characteristics of the subject, which are the result of the analysis of the biological face of the subject or the analysis of another element that allows to obtain equivalent information".

Analysis of the title of this article and its content shows that the concepts of biometric and genetic data in this article are differentiated as separate types of

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personal data. Although the theory and practice of this scientific direction indicate that genetic data is a kind of biometric data.

We consider it appropriate to present the title and content of the first and second parts of this article in the following edition:

"Article 26. Processing of biometric data

Biometric data is personal data characterizing the anatomical, physiological and biological characteristics of the subject.

Genetic data is biometric personal data related to the inherited or acquired characteristics of the subject, which are the result of analysis of the biological face of the subject or the analysis of another element that allows to obtain equivalent information".

Several scientists generally agree that biometrics is based on the automated identification of a person based on biological, physiological or behavioral characteristics[14].

The analysis of biometric systems carried out by O. Petrova and A. Răilean showed that fingerprint identification systems account for 59%; systems based on face geometry recognition technology – 17%; iris identification systems – 7%; hand geometry identification technique – 7%; identification by the pattern of the veins of the palm or finger – 7%; voice identification – 5%; identification by handwriting – 1%; other methods (identification by the retina of the eye, DNA, thermogram of the face, the shape of the auricles, smell, keyboard handwriting, by analyzing the bioelectric activity of the brain) – 1%[15].

Director of the Russian Biometric Society D. Nikolayev notes that the transition of the state to a digital economy, the presence of a unified state biometric database contribute to the receipt of better quality government and commercial services. The growth drivers of the biometric technology market will also be the need to address security issues and simplify procedures for obtaining government and commercial services[16].

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It should be noted that the above phenomena are currently being actively implemented in the Republic of Uzbekistan. The procedures for obtaining government and other services related to identification and confirmation of identity are being improved every day and innovative approaches are being introduced, thanks to modern IT technologies. These technologies provide the ability to identify and verify a person at a higher level and in a short time.

The concept of biometric personality identification directly follows the theory and practice of forensic identification. This scientific direction is developing and has great prospects in the near future. Biometric identification of a person is based on automated identification of a person by personality traits, which are carried out based on anatomical and biological databases.

Personality identification is the identification of a specific person who has an individually unique complex of innate and acquired anatomical, functional, genetic and mental properties, which are called personality traits[17].

Biometric identification is an automated process of comparing a unique biometric parameter of a person with the entire database of available data, as a result of which a coincidence or difference between them is established.

Biometric personal identification is the most effective, prompt and reliable method of personal identification. There is no unique one hundred percent reliable biometric technology today. There are specially developed technologies for falsifying fingerprints, facial images, creating artificial DNA, etc. The solution may be to create a multimodal biometric technology.

Modern technologies of biometric identification of a person, used in the disclosure and investigation of crimes, solve the following tasks:

1. Identification of the person who committed a crime or an administrative offense based on the biometric characteristics. Maintaining biometric databases of physical features, fingerprints, voice and other modalities allows identification of the person who owns the corresponding samples;

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2. Establishment of the fact of committing two different crimes by one person. When comparing the traces seized during examining the scene of the incident from one place of the incident, it is possible to establish a coincidence with the traces seized during the inspection of the scene, based on which it can be concluded that these crimes were committed by one person;

3. Implementation of border control using live scanners for verification by fingerprints, video surveillance, cameras for scanning the iris and retina of the eyes and other technologies. A check against biometric databases will allow identifying wanted persons, who have fake documents, etc.

The ongoing socio-political changes in Afghanistan place increased demands on the process of personal identification to maintain peace and security.

4. Biometric data can be used to control migration processes. Several scientists are proposing to obtain facial images, fingerprints and biological samples from migrants.

The Eurodac biometric system operating in the European Union allows for biometric control over asylum seekers and illegal migrants. By matching fingerprints, the system weeds out illegal asylum candidates.

Modern socio-economic aspects determine the intensification of the processes of migration of citizens. Citizens of the Republic of Uzbekistan, leaving the country, especially to places of regional and military conflicts, may become victims of a crime or accident. Large car accidents periodically occur in the Republic of Kazakhstan, the Russian Federation, where citizens of the Republic of Uzbekistan die. Often, the identification of those dead because of a car accident that has occurred is particularly difficult. It is not always possible to carry out face identification based on the face image and fingerprints.

In our opinion, under conditions of quarantine restrictions, a person traveling outside the Republic of Uzbekistan must submit samples for PCR analysis to detect coronavirus, while based on the above, it is advisable to simultaneously obtain biological samples for DNA analysis.

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5. Direct search for persons on the wanted list, evading administrative punishment or included in the lists of restricted access. The advantage of several technologies for biometric identification of a person is that they can carry out a hidden check on databases. Operational identification can be carried out using a video surveillance system of the Safe City hardware and software complex. Most of the public places are equipped with CCTV cameras. In addition, in the Republic of Uzbekistan mobile centers for communication and coordination of forces to ensure public order operate based on buses, equipped with video cameras, which allow monitoring facial flows to detect wanted persons and control the external situation.

6. Keeping forensic records based on biometric characteristics increases the efficiency of information support for forensic-expert, investigative, operational-search activities. Fingerprint and habitoscopic automated databases are effectively used in the Republic of Uzbekistan. State genomic registration will be introduced in the country starting in 2023. The introduction of new biometric databases, the creation of multimodal biometric databases, as well as integration with other databases are promising.

7. Biometric databases facilitate the identification of unidentified corpses. When an unidentified corpse is found, mandatory identification (signaling) photography and fingerprinting of the corpse are provided (Article 138 of the Criminal Procedure Code of the Republic of Uzbekistan). In case of significant cadaveric changes, in which it is difficult to identify the corpse, it is advisable to take biological material (Article 188-191 of the Criminal Procedure Code of the Republic of Uzbekistan).

It should be noted that the territory of the Republic of Uzbekistan is located in a zone of seismic activity, which causes periodic cases of earthquakes, landslides, mudflows and other natural disasters, which often take lives of people.

A large number of victims, which in most cases are difficult to identify, arise from plane crashes. On September 11, 2001, the largest terrorist attack in history

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involving four airliners was committed in the United States, resulting in numerous casualties.

The analysis of these cases shows that cases of man-made disasters, natural disasters and other emergencies are accompanied by massive human casualties. At the same time, the issues of identifying the identity of the deceased are of particular relevance, which necessitates the expansion of biometric registration of persons.

8. Biometric databases can also be used to identify persons of old or young age, as well as persons with diseases due to which they are unable to confirm their identity. There are problems with adolescents who are prone to occasional runaways from home, as well as people with mental illness who may get lost or not be able to inform about themselves, etc.

9. The use of international exchange of biometric databases of terrorists and extremists, especially dangerous recidivists, persons on the international wanted list contributes to law enforcement agencies in countering national and international crime. For example, 69 countries use the DNA database created by the member countries of Interpol. Only the joint efforts of countries within the framework of international cooperation in the fight against crime will greatly increase its effectiveness;

10. Creation and functioning of biometric databases also carry preventive functions. A person who knows that his/her fingerprints, facial images, genomic information, etc. are in the forensic database will avoid committing crimes and offenses.

Biometric features such as the papillary pattern of fingers, iris pattern, DNA structure, voice, gait and others are unique, reliable and unchangeable characteristics of a person throughout his life, thereby ensuring high reliability of identification processes in anti-crime activities. It should be noted that the widespread use of biometric technologies in modern conditions determines the solution of a complex of legal, organizational, technical and methodological aspects, as well as issues of ensuring the guarantee of the safety and lawful use of personal data.

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