KAZAN UNIVERSITY LAW REVIEW

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Dear readers,

I would like to present for your attention the third regular issue of the journal "Kazan University Law Review" in 2024.

The issue you are now holding in your hands contains articles on topical issues in the theory and practice of Russian and foreign law.

The issue starts with an article by Akmal Saidov, Academician of the Academy of Sciences of the Republic of Uzbekistan, Doctor of Legal Sciences, Professor, the First Deputy Speaker of the Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan, "Modern legal map (legal geography) of the world: from origins to global perspective". The author considers the modern legal map of the world from a historical perspective, emphasizing its importance as a fundamental category in comparative law. In the context of globalization, the researcher notes that comparative law is becoming an increasingly important field of study, providing a basis for understanding the similarities and differences between legal systems as well as identifying areas of convergence and divergence. One of the main problems of comparative law in the era of globalization is the growing complexity and diversity of legal systems. The legal map of the world is highly dynamic, reflecting major political and legal changes in the global arena, including the emergence and disappearance of state entities and the convergence or divergence of legal processes in different territories. This article provides a brief overview of the legal systems of five geographical continents.

The issue continues with a study by Elizaveta Gromova, Ph.D. (Law), Associate Professor, Deputy Director of the Law Institute on international activity, Associate Professor, Department of Entrepreneurial, Competition and Environmental Law, South Ural State University (national research university), and Daniel Brantes Ferreira, Ph.D., Senior Researcher, National Research South Ural State University (Russia), Professor, AMBRA University (USA), CEO, Brazilian Centre for Mediation and Arbitration (Rio de Janeiro, Brazil). In the study "Designing trustworthy national models of the regulatory sandboxes in Russia and India: a viewpoint" the authors define the purpose of the study, which is to identify the anomaly of national regulatory sandbox models in India and Russia and to identify the problem of these models, which can be overcome by proper regulation based on a trust-based approach. These countries were chosen because of their long-standing

partnership in mutual developing economies and ICT, aspiration to develop digital technologies and similar levels of development of the digital economy and legislation on regulatory sandboxes. Comparative legal analysis of the legislation on regulatory sandboxes across the world and literature allowed the combination of general features of the sandboxes and their subsequent application in defining the peculiarities of regulatory sandboxes in India and Russia. Formal legal analysis and modelling method allowed us to form national models of the regulatory sandboxes and make some recommendations to increase societal trust in these efficient tools of smart and agile governance.

The next research is presented by Anna Tsvetkova, student, intern researcher of the scientific Laboratory "Digital Technologies in Criminalistics" of the Department of Scientific Research of the V. F. Yakovlev Ural State Law University, and Dmitriy Bakhteev, Professor of the Department of Criminalistics, Principal Researcher of the Department of Scientific Research of the V. F. Yakovlev Ural State Law University, Doctor of Legal Sciences, Associate Professor, "Features of keystroke dynamics and their forensic significance: literature review". In this article, the authors conduct a forensic study of handwriting dynamics, the relevance of which is due to the potential possibility of determining in the investigation of crimes who exactly typed the text, avoiding the prosecution of an innocent person whose account was used by the attackers. However, in order to make this possible, lawyers need to adapt the results achieved by colleagues from computer science to the normative process of criminal proceedings, which requires, first, a comprehensive understanding of the current level of research in this area and the peculiarities of keyboard handwriting dynamics, which will then form a forensically significant set necessary for accurate identification, as the authors mention. Scientists are already paying attention to this phenomenon, but the features proposed by them are not exhaustive and even the most common, in this regard, there is an obvious need to systematize the available developments and identify those features of keyboard handwriting dynamics that are the highest priority for their use in order to solve and investigate crimes. It is to present this information that the present work has been prepared.

I am sincerely glad to present to you the study by a collective of authors: Aleksandr Makarov, Second-year Master's student, and Karina Aynutdinova, Candidate of Legal Sciences, Associate Professor of the Department of Criminal Law and Procedure of the Faculty of Law of the TISBI University of Management. In the article "Levers for realization the mechanism of subjective civil law" the authors consider subjective civil rights through the prism of elements of the content of civil-law relations. It is pointed out that the right is not intended to be the starting point for granting subjects their civil rights. Such rights, the researchers note, are acquired or established through the performance by the subject or other persons of certain actions. In the context of the study, the functional component of subjective

right in relation to objective right is named. The objective right is presented as a vector of models of possible behavior — permissible, while the subjective right directly determines the model of permissible behavior, actually realized within the framework of a particular legal relationship. The study presents the concept of mechanisms and levers for the realization of subjective civil rights. Intermediate conclusions about the legal character and purpose of the subjective civil right as a phenomenon are drawn.

The issue is finalized by an article on "On the question of the concept of electoral right", prepared by a Aydar Khamdeev, Associate Professor of the Department of Theory and Methods of Teaching Law of the Kazan Federal University, Candidate of Pedagogical Sciences. In this article, the author reveals the character and content of the concepts: "electoral law", "electoral right of citizens", "objective electoral rights," and "subjective electoral right". The electoral law is a branch of law that regulates the rules and procedures of elections in a democratic society. This right guarantees every citizen the opportunity to participate in elections and influence the political life of the country. It determines the rights and duties of voters and candidates, as well as establishes the procedure for conducting elections, the system of electoral bodies, and norms on the inadmissibility of interference in elections. Electoral law also includes norms related to referendums and other forms of expressing the will of the people. It contributes to ensuring political stability, legitimacy of power, and the strengthening of democratic institutions.

With best regards,
Editor-in-Chief
Damir Valeev

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ARTICLES

Akmal Saidov

Academician of the Academy of Sciences of the Republic of Uzbekistan, Doctor of Legal Sciences, Professor, the First Deputy Speaker of the Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan

MODERN LEGAL MAP (LEGAL GEOGRAPHY) OF THE WORLD: FROM ORIGINS TO GLOBAL PERSPECTIVE

DOI: 10.30729/2541-8823-2024-9-3-119-128

Abstract. *This article explores the modern legal map of the world from a historical perspective, highlighting its significance as a fundamental category in comparative law. Amidst globalization, comparative law has become an increasingly crucial field of study, providing a foundation for understanding the similarities and differences between legal systems, as well as identifying areas of convergence and divergence. The author identifies one of the primary challenges for comparative law in the era of globalization as the growing complexity and diversity of legal systems. The legal map of the world is highly dynamic, reflecting major political and legal changes on the global stage, including the emergence and disappearance of state entities, and the convergence or divergence of legal processes in various territories. The article offers a brief overview of the legal systems across the five geographical continents.*

Keywords: *legal map, legal system, comparative jurisprudence, state, law, legislation.*

Problem statement. In order to determine the place and role of the legal system in comparative law, we have to follow the Chinese methodology, as in many other cases, and start with the term. However, there is no need to explain what is behind the term "legal system" in modern legal science, particularly in comparative law. Language differences do not matter much here.

How can a legal system be presented in the context of comparative law? That is indeed *ignotum per ignotius* — the unknown is explained through the more unknown. We are aware of the many points of view expressed and defended, but even a review of them does not constitute the subject of our discussion. It seems necessary only to outline the starting points of the legal material, which will further allow us to draw some theoretical and practical conclusions about the place and role of the legal system in comparative jurisprudence. However, we can say in advance that despite the national, historical, and other differences in legal systems, there are some common regularities in the development of legal systems in modern times.

The purpose of our discussion is to find out **what is meant by a legal system?** We apply the term "legal system" in the sense of "national legal system". For example, the legal systems of France, Uzbekistan, Italy, etc. To characterize a certain complex of national legal systems that, by virtue of common features and attributes, can be attributed to one group, it is advisable to use the concept of "legal family".

The category "legal system" presupposes the peculiarities of:

— legal understanding (historical evolution of the conceptual apparatus, legal mentality, legal ideology);

— lawmaking (formation and development of sources of law);

— law enforcement (regularities of court arrangement, judicial interpretation).

Similarities and differences in each of the elements are taken into account when classifying national legal systems, attributing them to one or another legal family.

As the initial provisions for the classification of national legal systems, the famous French comparativist R. David pointed out two criteria:

First, ideological — religion, philosophy, economics, and social structure;

Secondly, legal — legal technique.

This operationalist approach allowed R. David to distinguish three groups of legal systems:

— Romano-Germanic legal family;

— the common-law family;

— the family of socialist law.

In this case, there is a kind of synthetic approach in the classification criteria: integration of conceptual structures of national legal systems or the hierarchy of different sources and the type of society that aims to create with the help of law (the place of law within a given social order)[1].

[1] *David R.* Les grands systèmes de droit contemporains. 7 éd. [The major modern legal systems. 7th ed.]. Paris: Dalloz, 1978. 657 p.

In the comparativist literature there are also approaches; for example, doctrinal developments of such comparativists as: K. Zweigert, K. Kötz, K. Osakwe, V. E. Chirkin, Y. A. Tikhomirov, M. I. Marchenko, V. I. Lafitsky and others became widely known due to numerous publications on comparative law; many of them were included in textbooks on the theory of state and law, which in complex can be defined as a **"breakthrough of comparative law of the XX century"**[1].

The studies of famous comparativists received a generalized expression in the concepts proposed by theorists and philosophers, sociologists, and political scientists of law, i.e., proposed by narrow specialists of law. As it seems to us, we can offer the following definition: **the legal system is a historically conditioned, interrelated (interdependent) legal understanding, an ideological element, i.e., legal views, a hierarchically structured system of lawmaking, and law enforcement.**

Theoretical analysis of the regularities of the historical development of law is designed, in particular, to show that the way of developing law within the framework of national statehood is not "legal provincialism", which gives way to "legal universalism", but one of the most important regularities of the development of the civilization of law.

All legal systems should be recognized as equal. Comparative law refuses today to search for "universal ways of development", "optimal legal models", suitable everywhere and always[2].

The legal system is the initial category of comparative law. In the modern world, each state has its own national law, and it happens that in the same state there are several competing legal systems. For example, in the modern legal system of India, the norms of new national legislation, Hindu law, English common law, and Islamic law coexist and interact. Non-state communities also have their own law: canon law, Islamic law, Hindu law, and Jewish law. There is also international law designed to regulate, on a universal or regional scale, interstate and foreign economic relations.

The national legal system of each state is formulated in different languages, uses different legal terminology and legal techniques, and is designed for a society with very different structures, mores, and beliefs.

The place and peculiarities of national legal systems are reflected in the legal geography or legal map of the world. The term "legal map of the world" is very

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[1] *Lezhe R.* Velikie pravovye sistemy sovremennosti: sravnitelno-pravovoy podkhod [The great legal systems of our time: a comparative legal approach] / Per. s fr. 2-e izd., pererab. M.: Volters Kluver, 2010. Pp. 103–110.

[2] *Saidov A.Kh.* Yuridicheskaya globalistika — novoe napravlenie pravovykh issledovaniy [The legal globalism — a new direction of legal research] // Pravovaya sistema Rossii v usloviyakh globalizatsii. Sbornik materialov "kruglogo stola" [Legal system of Russia in the context of globalization. Collection of materials of the Roundtable]. M.: Os-89, 2005. P. 33.

capacious and has been developed within the framework of comparative law. The study of all aspects of dynamics and historical perspective is of particular interest to comparativists.

Comparative law is the science of the legal map or legal geography of the world.

The legal map of the world is highly dynamic. It reflects the main political and legal changes, including the formation of new national legal systems, changes in their status, the impact of integration processes, processes of convergence, convergence, unification and harmonization of law.

The legal map of the world in all its diversity is the subject of comparative law, so the question of the number and classification of national legal systems is of great scientific-theoretical and practical-applied interest.

The main components of the legal map of the world are national legal systems. According to Prof. V. E. Chirkin: "The modern world already counts more than 200 states. The components of almost 30 modern federations are approximately 400 subjects of federations, in each of them there is a territorial public collective. There are about 200 territorial autonomous regions in about 10 countries around the world (more than 150 in China). The number of municipalities in each major state is in the tens of thousands"[1].

During the 20th century, the total number of national legal systems increased steadily and almost tripled. This was caused primarily by the redivision of the world after the First and Second World Wars. In the early 1990s, following the collapse of the USSR, SFRY and Czechoslovakia, there were 20 more. As of 2023, various sources estimate the total number of national legal systems at 195 (193 UN member states and observers: Vatican City and the State of Palestine).

Since 1945, 102 countries in Asia, Africa, America, Oceania, and even Europe (Malta) have achieved state-legal independence, while the number of non-self-governing territories (colonies, protectorates, so-called overseas departments, etc.) decreased from 130 in 1900 to 35 in 2000. Most of them are now small island possessions in the Caribbean Sea and Oceania.

An important benchmark for determining the number of national legal systems is the membership of states in the United Nations. The growth in the number of UN member states between 1950 and 1989 was mainly due to the accession of states that had freed themselves from colonial dependence. They are commonly referred to as liberated countries. In 1990–2023, several more liberated countries joined the UN (Namibia, Eritrea, East Timor, etc.), but the main growth was due to the admission of post-socialist states, formed in place of the former USSR, SFRY, Czechoslovakia.

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[1] *Chirkin V. E.* Sravnitelnoe pravovedenie: uchebnik dlya magistratury [Comparative law: textbook for Master's degree programs]. M., 2012. P. 147.

The scale of future changes on the legal map of the world will be determined by the further course of ethnocultural processes in multinational states, the nature of economic, political, and cultural relations between countries and peoples, because the formation and development of new national legal systems is a complex historical process determined by a multitude of internal and external factors: political, social, economic, cultural, and ethnic.

With such a large and ever-increasing number of national legal systems, there is an urgent need for their grouping, which is usually carried out according to several criteria.

One of the main aspects of modern comparative law is the systematized study of the legal map of the world. The terms **"legal map of the world"** (V. A. Tumanov), **"legal geography of the world"** (W. Knapp), **"community of legal systems"** (J. Stalev) are used in comparativist literature for all national legal systems existing on the globe. These terms cover national legal systems. At the same time, attempts to present the legal map of the world as a supranational world law or as a mechanical sum of national legal systems should be rejected.

When revealing the concept of the "legal map of the world" we proceed from the general laws of development of human society. This is the most objective way to study the legal map of the world — a complex, multiform, full of contradictions and confrontation of various legal tendencies. The principle of historicism allows us to explain the place of each individual national legal system on the legal map of the world by its belonging to one or another legal family or legal civilization. The attribution of a particular legal system to a particular legal family allows, even without a detailed acquaintance with specific legal material, to draw a number of conclusions about its characteristic features.

What should be the scientific approach to describing the modern legal geography of the world? It seems particularly important to have a holistic perception or vision of the national legal system, the legal family to which the comparativist refers. A holistic view of the national legal system in its concrete-historical genesis and taking into account the socio-economic conditions in which it operates is an important requirement of modern comparative law.

Each legal family should be considered against the background of its historical development, then its modern structure should be described (summarizing the leading spheres and sources of law), the peculiarities of law enforcement (legal proceedings), and the way of legal thinking.

In describing the major legal families, the comparativist must make a meaningful choice and, above all, limit the number of legal systems to be considered. For this purpose, a representative approach is used, whereby the comparativist must first identify the so-called ancestral, or parent, legal systems where original legal solutions were first created and then trace their further

geographical spread by considering the so-called subsidiary (recipient) legal systems.

The parent legal systems are usually those of large states with extensive and long-lasting legal experience. This experience is utilized by small and new states belonging to the same legal family as the parent legal system. This was the impact of French civil law on the law of the states that emerged in Europe after the French Revolution (e.g., Italy, Belgium, Luxembourg). Of course, the ideological influence of the parent legal system varies from one branch of law to another.

Thus, **the description of each legal family should, on the one hand, be a reflection of its historical development and, on the other hand, be based on its essential legal properties today.**

The process of the formation of the modern legal map of the world has several millennia. Many historical epochs have passed, so we can talk about the existence of several periods in the formation of the legal map of the world. We can identify: ancient, medieval, new and recent periods.

The type of legal civilization should be understood as objectively established, relatively stable, and with inherent conditions and features of its development, characterizing its role and place in the world legal community at a given stage of the world history of law. In other words, we are talking about the main typological features of national legal systems, which bring them closer to some and, on the contrary, distinguish them from other legal systems.

Comparative law, as an independent legal science, studies the territorial differentiation of legal systems, i.e., the legal geography of the world. Since the law reflects not only the connection of times, but also the huge modern diversity of national legal systems and the uniqueness of the legal world, it is quite natural to raise the question about the world being subdivided into legal regions, which can be based on the civilizational approach to law, i.e., **legal civilization.**

The study of legal civilizations, which actually began as early as **Herodotus**, was continued by many scientists of antiquity, the Middle Ages, and the New and Modern times, who noted that at the early stages of the formation of local legal civilizations, the borders of legal regions usually coincided with physical-geographical boundaries that limited the area of distribution of one or another ethnic community. With the development of legal civilizations, as a result of the Great Migration of Peoples and then mass migration of population, the formation of regional and even more global ties, the geographical-legal boundaries lost their former determining significance, although they still retain the role of important legal boundaries.

Each national legal system has its own unique features, but by identifying any similarities with other legal systems, certain types of legal systems can still be identified. The type of legal system forms a complex of conditions and features

of legal development, which, in some essential, sometimes decisive (typological) features, on the one hand, relate it to a number of similar legal systems and, on the other hand, distinguish it from all others. The very existence of types of legal systems and their historical evolution are the result of the fact that legal development in the states proceeds at different rates, in different environments, in different conditions, and in different ways. However, it is not possible to distinguish types of legal systems on the basis of one or more criteria that are important for all national legal systems.

Legal typologies can be of different types. Some take into account all the national legal systems of the world **(global typology)**; others limit themselves to the legal systems of one region **(regional typology)**, while others focus on the typological characterization of one national legal system. At the same time, legal typology may be based on different criteria.

In the legal literature, a more detailed typological classification of national legal systems proposed by the famous French legal scientist R. David and, to a lesser extent, by the German comparativist K. Zweigert has become widespread. The typologies of R. David and K. Zweigert have already entered the scientific community and are widely used in the educational process. However, these typologies raise some questions. For example, they do not take into account the significant changes in the legal map of the world that have occurred over the last quarter of a century.

The very idea of studying law through geography (geographical maps) is not new. For example, Aristotle tried to make a map of law (by analyzing the constitutions of Greek cities-polises). Legal geography of the world was formed as a science in the early XX century with the publication of a fundamental monograph by **J. Wigmore "The Panorama of the World's Legal Systems"**[1], in which the author for the first time presented a panorama of legal (legal) systems of the world, in which the author, for the first time, depicted the existing systems of law in one or another country on the world map. Although Wigmore's ideas were a scientific breakthrough in this field, they required serious revision.

This was the work of the famous French comparativist R. David, the founder of the modern science of comparative law. Based on the related origin (evolution) of legal norms, he introduced the concept of legal family into scientific circulation. The fundamental basis for the development of comparative law was comparative philology (linguistics), where a couple of centuries before G. Leibniz introduced such a term as a language family. By superimposing (combining) these sciences, it was established that the development of law directly depends on the development and evolution of a particular language.

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[1] *Wigmore J.* The Panorama of the World's Legal Systems. Washington, 1928. 1206 p.

Thus, the whole world (all world law) is divided (or classified) by René David into certain legal families, i.e., "blocks" of law united by a common origin, history of evolution, similar doctrines, and the very concept of law. It was R. David who gave the legal geography of the world the form that is now accepted as a basis.

The legal typology can be based on a geographical criterion, and then on the legal map of the world can be identified:

— the legal map of Europe;
— the legal map of the Americas;
— the legal map of Asia;
— the legal map of Africa;
— the legal map of Australia and Oceania.

Let us briefly characterize each of them.

Legal map of Europe. Europe is a part of the world, which together with Asia forms a single continent — Eurasia. Currently, there are 50 national legal systems on the territory of Europe, differing in their basic legal parameters and traditions. The modern legal map of Europe in the XXI century has undergone very serious changes, and its formation was greatly influenced by the results of two world wars and the collapse of the world system of socialism.

A distinctive legal civilization was formed in Europe, which spread throughout the world. On the European legal map there are several legal families: English common law, Romano-Germanic law, Scandinavian law; some legal scientists also point to the family of Slavic law. Europe is historically characterized by the desire for a common legal space. At present, European law occupies a very important place on the legal map of Europe. The tendency to unification and harmonization of national legislations is strong here.

Legal map of the Americas. America as a part of the world consists of two continents, North and South America, connected by the Isthmus of Panama. The legal map of the Americas is made up of 35 national legal systems. While the legal systems of 14 States, i.e., the United States of America, Canada, and the Commonwealth of Nations, belong to the common law family, the legal systems of 20 Latin American States either belong to the Romano-Germanic law family or to the Latin American law family, and the Cuban legal system belongs to socialist law.

The formation of the modern legal map of the Americas has a long history. The discovery, exploration, and conquest of the territories and states of America in the XV–XVIII centuries and their subsequent integration into the system of world economic relations were a consequence and an integral part of one of the stages of the development of European legal civilization. The national legal systems of the Americas have a distinctive legal culture. While economic integration

processes are very intensive, the same cannot be said for the legal development of American states.

Legal map of Asia. Asia is the largest part of the world and is the territory of more than half of the world's population. Up until the middle of the XX century, more than 90% of the region's population lived in colonies and dependent countries. The main metropolitan countries were Great Britain, France, the Netherlands, Japan, and the USA. The law of colonial countries, along with the original legal traditions of the East, had a significant impact on the formation of the modern legal map of Asia.

The modern legal map of Asia includes about 50 national legal systems, which can be attributed to different legal families (Hindu law, Far Eastern law, Islamic law) or to mixed legal systems.

Legal map of Africa. Africa occupies 1/5th of the landmass of the globe. On the modern legal map of Africa, there are more than 50 national legal systems, which are a symbiosis of the norms of traditional African customary law and the legislation of the former metropolitan states. The development of the law of African states has been greatly influenced by English common law and Romano-Germanic law. **The African Legal Map is a laboratory of comparative law.**

Australia and Oceania legal map. Australia and Oceania is a politically, legally and economically diverse region. If Australia is a state occupying the whole continent, Oceania is the largest cluster of islands on the planet (about 10 thousand) in the central and South-Western parts of the Pacific Ocean. On the legal map of Australia and Oceania, English common law prevails.

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DESIGNING TRUSTWORTHY NATIONAL MODELS OF THE REGULATORY SANDBOXES IN RUSSIA AND INDIA: A VIEWPOINT

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Abstract. *Despite the emergence of research articles in the sphere of regulatory sandboxes, there is no research devoted to the comparison of the national models of regulatory sandboxes, issues of these models, especially in correlation to the implementation of the trustworthy approach. This paper aims to define the anomalies of the national models of the regulatory sandboxes in India and Russia, to determine the issues of these models which could be overcome by proper regulation based on a trustworthy approach. These countries were chosen because of their long-standing partnership in mutual developing economies and ICT, aspiration to develop digital technologies and similar levels of development of the digital economy and legislation on regulatory sandboxes. Comparative legal analysis of the legislation on regulatory sandboxes across the world and literature allowed the combination of general features of the sandboxes and their subsequent application in defining the peculiarities of regulatory sandboxes in India and Russia. Formal legal analysis and modelling method allowed us to form national models of the regulatory sandboxes and make some recommendations to increase societal trust in these efficient tools of smart and agile governance. The*

features of the general model of the regulatory sandboxes, applied across the world, and the peculiarities of the regulatory sandboxes in Russia and India are defined. The author proves the necessity to upgrade the national legislation on the regulatory sandboxes by setting up transparent eligibility criteria, establishing a flexible testing period and a set of measures for the protection of potential customers and counterparties. Recommendations for the improvement of national models of the regulatory sandboxes given in the article will increase the quality of the regulation and the level of social trust in regulatory sandboxes in Russia and India. The results achieved in this research article could be used in the law-making process in establishing regulatory sandboxes across the world and for further research of this promising mechanism of smart regulation.

Keywords: *regulatory sandbox, trustworthy approach, smart regulation, digital innovations, digitization, Fintech.*

Introduction

According to F. Bacon, as the births of living creatures at first are ill-shapen, so are all innovations, which are the births of time[1]. The famous philosopher was right. The emergence of digital innovations became a cornerstone of public policy. Digital technologies can make a positive impact on the global economy and ensure the sustainable development of society[2]. At the same time, incorrect policy for creation and using of technologies can lead to harm and losses.

That is why modern governments seek to develop digital innovations and minimize risks associated with them[3]. It predetermined the necessity to transform current regulation and governance. To do it correctly, cutting-edge trends in regulation must be considered[4]. The decrease of the role of regulators, caused by the spread of digital

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[1] *Bacon F.* (1625) "Of Innovations", The Essays or Counsels, Civil and Moral, of Francis Ld. Verulam Viscount St. Albans, available at: http://www.authorama.com/essays-of-francis-bacon-25.html (accessed 2020.11.08).

[2] *Esfangareh A. N., Hojeghan S. M.* (2015) "Digital economy and tourism impacts influences and challenges", International relations, No. 2, pp. 308–316; *Berdykulova G., Sailov A., Kaliazhdarova Sh., Berdykulov E.* (2014). The Emerging Digital Economy: Case of Kazakhstan. Procedia — Social and Behavioral Sciences, No. 109, pp. 1287–1291; *Braunerhjelm P.* (2008), "Entrepreneurship, knowledge and growth", Foundations and Trends in Entrepreneurship, Vol. 4, No. 5, pp. 451–533; *Carlsson B., Acs Z. J., Audretsch D. B., Braunerhjelm P.* (2009) "Knowledge creation, entrepreneurship, and economic growth: a historical review", Industrial and Corporate Change, Vol.18, No. 6, pp. 1193–1229.

[3] *Dean D., Zwillenberg P.* (2015) "The Internet Economy in the G-20. The New Digital Economy. How it will transform business", Oxford economics, No 2, pp. 7–23.

[4] *Samer H., Filippi P.* (2016) "Blockchain technology as a regulatory technology: From code is law to law is code". First Monday, Vol. 21, No 12; *Stern A.* (2018) "Innovation under Regulatory Uncertainty: Evidence from Medical Technology", Journal of Public Economics, 145, 181–200; *Visvizi A., Lytras M. D.* (2020) "Government at risk: between distributed risks and threats and effective policy-responses", Transforming Government: People, Process and Policy, Vol. 14, No. 3, pp. 333–336.

innovations, are among them. For example, the Blockchain allows for anonymity of financial transactions[1], thus reducing the impact of the state. In the opinion of experts in the field, the governance should become more "sensitive" to modern trends[2]. That is why the concepts of "smart regulation", "good governance", "agile governance" are being implemented rapidly[3].

These concepts are implemented to develop legal tools to test innovative products or services in "real-life" conditions. The regulator should decide if it is necessary to "launch" the innovation for mass production and change existing legislation, based on achieved results[4]. This "test-and-learn" approach gave rise to unorthodox tool for "testing" digital innovations in the absence of regulation — regulatory sandboxes (hereinafter — RS).

RS were first introduced in 2016 as part of a government initiative to support UK Fintech companies. British Sandbox has encouraged innovation in more than 500 companies, and in more than 40 of them, it has been further regulated[5]. The success of the UK sandbox has led to its worldwide expansion. The RS was recognized as a solution that allows the application of regulatory reliefs under current legislation to permit important experimenting for the new digital products[6].

At the same time, RS are considered as an instrument of which inappropriate use can result in money laundering[7] and "a covered effort to get around the consumers' protection laws" (Wu, 2011). The aforementioned opinions lead to the rejection of using this tool in some countries. For example, South Africa refused to use RS in 2019[8].

The reason for this is the lack of trust due to the imperfections of the regulation of such sandboxes in terms of consumers rights' protection and transparency of

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[1] *Reshef Kera D.* (2020) "Sandboxes and Testnets as "Trading Zones" for Blockchain Governance". In: Prieto J., Pinto A., Das A., Ferretti S. (Ed.s) Blockchain and Applications.

[2] *Luna-Reyes L., Juiz C., Gutierrez-Martinez I., Duhamel F. B.* (2020) "Exploring the relationships between dynamic capabilities and IT governance: Implications for local governments", Transforming Government: People, Process and Policy, Vol. 14, No. 2, pp. 149–169.

[3] *Nanda Ved P.* (2006) "The "Good Governance" Concept Revisited", The ANNALS of the American Academy of Political and Social Science, Vol. 1, No. 603, pp. 269–283.

[4] *Qi Y., Li Y.* (2019) "New Economy in China: Emerging, Operation and Regulatory Reform", China Economist, Vol. 14, No. 2, pp. 2–13.

[5] Regulatory Sandboxes and Financial Inclusion, available at: https://www.cgap.org/sites/default/files/researches/documents/Working-Paper-Regulatory-Sandboxes-Oct-2017.pdf (accessed 2023.11.08).

[6] Report on Regulatory Sandbox of the Department of the Treasury of the USA (July 31, 2018), available at: https://home.treasury.gov/news/press-releases/sm447 [https://perma.cc/95DV-H9K3 (accessed 2023.11.08).

[7] *Müller J., Kerényi A.* (2019) "The Need for Trust and Ethics in the Digital Age — Sunshine and Shadows in the FinTech World", Financial and Economic Review, Vol. 3, pp. 5–34; *Stern A.* (2018) "Innovation under Regulatory Uncertainty: Evidence from Medical Technology", Journal of Public Economics, 145, 181–200.

[8] South African Reserve Bank (SARB) *Fintech release*, available at: https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/8259/SARB%20FinTech%20release%2013%20February.pdf (accessed 2023.11.08).

sandbox participants' activity. Those imperfections exist but could be fixed by using a trustworthy approach. The mentioned approach is based on the principles of credibility from the society to the governmental decisions[1].

Attempt to design trustworthy regulation for digital technologies is another trend. As it is said, technologies are not deterministic[2]. This means that governments should firstly think about the interests of humans and society. That is why OECD approved recommendations on trustworthy AI. The EU focused on developing human-centric trustworthy AI based on the supremacy of human rights and values[3].

In the case of RS, using this approach represents the application of transparent and trustworthy protective measures, aimed at ensuring the interests of regulators, participants of the sandboxes and their counterparties and consumers as well. In other words, it is necessary to change the opinion on RS as a legal tool for money laundering and bypassing consumers' rights by promoting a trustworthy approach to them.

That is why modern states are highly needed in smart regulation for the RS, which will not make them a means of bypassing regulatory requirements, but instead an effective tool for the development of the digital economy.

This is extremely important for India and Russia. These countries were chosen for the analysis because of the following reasons. Since 2000, India and Russia have been working together under a privileged strategic partnership. This has resulted in tremendous highs for both countries: India's trade with Russia crossed $ 10.7 bn previous years, witnessing a 21.5% growth[4].

A good partnership between Russia and India enhances economic development and can boost cooperation in the sphere of security, economy, science and technologies within the bilateral agreements[5] and within the key agreements within BRICS group[6].

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[1] *Pinem A. A., Immanuella I. M., Hidayanto A. N., Phusavat K. and M.* (2018) "Trust and its impact towards continuance of use in government-to-business online service", Transforming Government: People, Process and Policy, Vol. 12 No. 3/4, pp. 265–285.

[2] UN Digital Economy report 2019, available at: https://unctad.org/webflyer/digital-economy-report-2019 (accessed 2023.11.08).

[3] OECD Recommendations for human-centered AI, available at: ht tps://www.oecd.ai/ai-principles/ (accessed 2023.11.08).

[4] *Kaura V.* (2018) "India's Changing Relationship with Russia", The RUSI Journal, Vol. 163, No. 1, pp. 48–60; *Lunev S., Shavlay E.* (2019) "Russia and India in the Indo-Pacific", Asian Politics and Policy, Vol. 1, No. 11, pp. 181–191.

[5] Declaration on the India-Russia Strategic Partnership, 2000), available at: https://indianembassy-moscow.gov.in/bilateral-relations-india-russia.php (accessed 2023.11.08).

[6] The Strategy for BRICS Economic Partnership, available at: https: //Downloads/partnershipstrategy_ eng.pdf (accessed 2023.11.08). Memorandum of Understanding on Cooperation in Science, Technology and Innovation between the Governments of the Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South, available at: http:// www.brics.utoronto.ca/docs/BRICS%20STI%20MoU%20ENGLISH.pdf (accessed 2023.11.08).

Moreover, India has seen Russia as a crucial part of its strategy to balance China and USA[1]. China and USA are the world leaders in digital technologies. That is the reason for India's and Russia's development of ICT and collaboration in this field. Due to the bilateral agreements, both countries are making investments to the national economy of the partner. Moreover, Russia and India organized an intergovernmental group to develop ICT.

They are striving to build a national digital economy to solve cutting-edge problems[2]. At the same time, the level of the development of digital technologies is not high. Russia is in the 43rd place, and India holds the 48th place in this ranking[3]. According to the experts' point of view, both countries face issues in the development of digital technologies[4].

Another reason for choosing Russia and India is that both countries are now implementing RS. The legislation on RS are now being designed in these countries. At the same time, the doubts about the trustworthiness of national RS have already appeared[5].

To succeed in the field of creation efficient RS, India and Russia should implement best world practices of sandboxing regarding the peculiarities of national legal systems, avoiding failures in customers rights' protection and provision of the transparency by using a trustworthy approach.

This article aims to define the peculiarities of the national models of the regulatory sandboxes in India and Russia, to figure out the issues of these models which could be got over by proper regulation based on trustworthy approach.

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1 *Kaura V.* (2018) "India's Changing Relationship with Russia", The RUSI Journal, Vol. 163, No. 1, pp. 48–60; *Lunev S., Shavlay E.* (2019) "Russia and India in the Indo-Pacific", Asian Politics and Policy, Vol. 1, No. 11, pp. 181–191.

2 *Brigante A., Martins Ribeiro M. C., Calvacante D., Schmidt I., Braga E.* (2017) "Intellectual property and trademark legal framework in BRICS countries: a comparative study", World Patent Information, No. 49, pp. 1–12; *Morazán P., Knoke I., Knoblauch D., Schäfer T.* (2012) "The role of BRICS in the developing world", (Brussel: European Parliament's Committee on Development); *Mikheeva I., Loginova A.* (2017) "WTO accession of BRICS countries: the Chinese experience", BRICS Law Journal, Vol. 4, No. 1, pp. 84–89.

3 World Digital Competitiveness Ranking 2020, available at: https://www.imd.org/wcc/world-competitiveness-center-rankings/world-digital-competitiveness-rankings-2020/ (accessed 2023.11.08).

4 *Kurt S., Kurt U.* (2015) "Innovation and Labor Productivity in BRICS Countries: Panel Causality and Co-integration", Procedia-Social and Behavioral Sciences, No. 195, pp. 1295–1302.

5 *Poornima A.* (2020) "Regulating to Escape Regulation: The Sandbox Approach", available at: https://www.law.ox.ac.uk/business-law-blog/blog/2020/08/regulating-escape-regulation-sandbox-approach (accessed 2020.11.08).

There are many research articles and reviews dedicated to the new ways of regulation caused by digital transformation[1]. Some of the mentioned research papers considered peculiarities in the application of RS in different countries[2] or unions as EU[3] or BRICS group[4]; or, more frequently, investigated the role of the RS in separate sphere such as Fintech[5].

However, there are no research articles devoted to the analysis of current regulation on the RS in the Republic of India and Russia, key BRICS participants and long-standing partners. Previous research, dedicated to the analysis of the legislation on RS within BRICS[6] shows the necessity of in-depth comparative analysis of the national models of the RS in Russia and India, determination its peculiarities, issues and prospects of the further development.

Methods used in this research article are comparative legal analysis, formal legal analysis of the current legislation and literature in the sphere of RS and modelling method. The application of the comparative legal analytical method to the legislation and works of scholars devoted to the RS allowed researchers to combine general features of the sandboxes across the world (General Model of Regulatory Sandboxes) and then apply it to define peculiarities of the RS in India and Russia. Which gave rise to the discussion of Indian and Russian national models of RS.

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[1] *Reshef Kera D.* (2020) "Sandboxes and Testnets as "Trading Zones" for Blockchain Governance". In: Prieto J., Pinto A., Das A., Ferretti S. (Ed.s) Blockchain and Applications; *Allen H.* (2019) "Sandbox Boundaries", Vanderbilt Journal of Entertainment & Technology Law, No. 5, pp. 2–22; *Nanda Ved P.* (2006) "The "Good Governance" Concept Revisited", The ANNALS of the American Academy of Political and Social Science, Vol. 1, No. 603, pp. 269–283; *Qi Y., Li Y.* (2019) "New Economy in China: Emerging, Operation and Regulatory Reform", China Economist, Vol. 14, No. 2, pp. 2–13; *Zetzsche D., Buckley R., Barberis J., Arner D.* (2017) "Regulating a Revolution: From the Regulatory Sandboxes to the Smart Regulation", Journal of Corporate and Financial Law, Vol. 23, No 1, pp. 31–103.

[2] *Hendrik C. M., Pienaar M.* (2010) "Evolution of the South African Science. Technology and Innovation System 1994–2010: An Exploration", African Journal of Science, Technology, Innovation and Development, Vol. 2, No. 3, pp. 82–86.

[3] *Ahern D.* (2020) "Regulators nurturing Fintech innovation: global evolution of the regulatory sandbox as opportunity-based regulation", EBI Working Paper Series, No. 60, pp. 3–17.

[4] *Hendrik C. M., Pienaar M.* (2010) "Evolution of the South African Science. Technology and Innovation System 1994-2010: An Exploration", African Journal of Science, Technology, Innovation and Development, Vol. 2, No. 3, pp. 82–86; *Gromova E., Ivanc T.* (2020) "Regulatory Sandboxes (Experimental Legal Regimes for digital innovations) for BRICS", BRICS Law Journal, No. 2, pp. 10–36.

[5] *Jenik I., Lauer K.* (2017) "Regulatory Sandboxes and Financial Inclusion". Washington, D.C.: CGAP; *Fáykiss P., Papp D., Sajtos P., Tőrös A.* (2018) "Regulatory Tools to Encourage FinTech Innovations: The Innovation Hub and Regulatory Sandbox in International Practice", Financial and Economic Review, Vol. 2, No. 17, pp. 68–98; *Treleaven Ph.* (2015) "Financial Regulation of Fintech", Journal of Financial Perspectives, No. 3, pp. 2–17.

[6] *Gromova E., Ivanc T.* (2020) "Regulatory Sandboxes (Experimental Legal Regimes for digital innovations) for BRICS", BRICS Law Journal, No. 2, pp. 10–36.

Formal legal analysis and method of the modelling allowed the formation of models of RS (General Model, Russian National Model, Indian National Model) based on the trustworthy approach.

Results

Analysis of the legislation of those countries where RS are being used, allowed researchers to highlight the peculiarities of "general model" of RS. Although the allocation of a general model of RS is entirely conditional, as each of the countries carries out national legal regulation of the sandboxes, nevertheless, I note that the RS of these countries have some common features.

1. The general model of RS provides for their application in one or more sectors of the economy. As a rule, it is Fintech. This is typical for the RS in the UK[1], Singapore[2], Australia[3], and UAE[4]. RS in China and some other countries, in its turn, are created to develop Fintech, InsurTech market[5] and other markets.

2. The establishment of the RS is carried out by a specially authorized body in cooperation with potential sandbox participants. For example, the Financial Conduct Authority of the UK, Monetary Authority of Singapore. These governmental bodies and participants of the RS can determine the rules and conditions for testing digital innovations (Australia, Singapore, Malaysia). That is why the emergence of the RS across the world has led to a change in the role of the state from regulatory to advisory[6].

3. Testing parameters are most often defined on "case-by-case basis" (China, Australia, UAE, UK). This is dictated by the new role of the regulator, which seeks

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[1] Regulatory Sandbox Review, available at: https://digitalchamber.org/wp-content/uploads/2017/11/Regulatory-Sandbox-Review_Nov-21-2017_2.pdf (accessed 2023.11.08).

[2] The Monetary Authority of Singapore "Fintech Regulatory Sandbox Guidelines Singapore" available at: https://www.rajahtannasia.com/media/pdf/15_FinTech_RegulatorySandbox_Guidelines.pdf (accessed 2023.11.08).

[3] ASIC Sandbox, available at: https://download.asic.gov.au/media/5763623/comparison-asic-sandbox-enhanced-regulatory-sandbox-published-25-august-2020.pdf (accessed 2023.11.08).

[4] Regulatory Sandbox Review, available at: https://digitalchamber.org/wp-content/uploads/2017/11/Regulatory-Sandbox-Review_Nov-21-2017_2.pdf (accessed 2023.11.08).

[5] The Monetary Authority of Hong Kong *Circular on Fintech Supervisory Sandbox (FSS)* B1 /15C B9 /29C 2016, available at: https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2016/20160906e1.pdf (accessed 2020.11.08); Bank of Malaysia Regulatory Sandbox, available at: https://www.bnm.gov.my/index.php?ch=en_press&pg=en_press&ac=4273&lang=en (accessed 2020.11.08); Bank of Thailand Regulatory Sandbox, available at: https://www.bot.or.th/English/Pages/default.aspx (accessed 2020.11.08).

[6] *Ahern D.* (2020) "Regulators nurturing Fintech innovation: global evolution of the regulatory sandbox as opportunity-based regulation", EBI Working Paper Series, No. 60, pp. 3–17.

to define such conditions, interacting with potential sandbox participants and considering the specifics of each of them[1].

4. The timeframe for testing innovations is 3 to 12 months (China, Malaysia, Singapore, Thailand). Exceptions are the UAE RS and Australian Enhanced RS, where testing is up to 2 years. On the one hand, the choice of such a period is predetermined by the need to give innovators and regulators enough time to understand the viability of innovation. On the other hand, too long period of greenhouse conditions leads to the "addiction" to granted reliefs.

5. The general model of RS envisages a set of protective measures for the potential consumers and counterparties entering a legal relationship with the sandbox's participants to protect their rights in most countries using RS. Prior consent of the potential consumer is the most widespread among mentioned measures (China, UAE, UK). Liability insurance and special compensations as a measure of protection of consumers and counterparties are less common, but also applied in separate countries. For example, ASIC RS in Australia requires adequate compensation arrangements (minimum $1 million cover).

Indian Model of RS

The goal of innovation development in India is to raise GDE on R&D with a doubling of the business contribution by 2020-2022. At the same time, the barriers for digital technologies as the lack of a legal framework primarily in data protection and cyberspace requires working out a system of measures to remove them[2]. Among them — the creation of the RS.

The Draft Enabling Framework for RS was announced by the Indian Reserve Bank on April 18th in 2019. Due to this act, Indian Fintech RS is an important tool for creation flexible regulatory environment for testing products, based on digital technologies. Later in 2019, IRDAI (insurance regulator) and SEBI (capital market's regulator) launched similar RS' initiatives[3].

The goal of using the RS in India is to provide an environment to innovative startups for a limited scale testing of a new product, service or process that might engage application of some relaxations in regulatory requirements.

The conditions to apply the RS's regime are the absence of the regulation of the activity with the use of the digital innovation; necessity to ease the regulation

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[1] *Gromova E., Ivanc T.* (2020) "Regulatory Sandboxes (Experimental Legal Regimes for digital innovations) for BRICS", BRICS Law Journal, No. 2, pp. 10–36.

[2] Digital India (2020, September), available at: https://digitalindia.gov.in/ (accessed 2023.11.08).

[3] IRDAI Guidelines on Operational Issues Pertaining to the Regulatory Sandbox INT/ GDL/ RSB/ 139/08/2019, available at: https://www.irdai.gov.in/ADMINCMS/cms/frmGuidelines_Layout.aspx?page=PageNo3885 (accessed 2023.11.08); SEBI *Circular on Regulatory Sandbox* SEBI/HO/MRD/ 2019/P/64, available at: https://www.sebi.gov.in/legal/circulars/jun-2020/framework-for-regulatory-sandbox_46778.html (accessed 2023.11.08).

temporarily to force innovation; the ability of the creation to facilitate the delivery of the services in a significant way. Up to the IRDAI Guidelines, the allowance for testing "innovation in insurance" depends on the next "fit and proper" criteria: the proposal must help to increase insurance penetration or provide enhanced services; the proposal shall not be made merely for the sake of seeking a regulatory relaxation but shall be a genuine innovation[1]. Due to the SEBI Circular, the eligibility criteria are genuineness of innovation; genuine need to test; limited prior testing; direct benefits to users; no risks to the financial system; deployment post-testing[2].

The testing period in general for all sandboxes — is up to 12 weeks and corresponds to the General Model of RS. Due to the testing results, the regulator will decide if the product or service is viable and acceptable and if it is necessary to grant regulation to it.

The distinguishing feature of the Indian model of the RS is the fact that RS may consider "relaxing" measures, which could be defined case-by-case. As it is regarded in Draft Enabling Framework of RBI, there is a possibility for relaxations. According it, 4 of the IRDAI Guidelines the Authority may consider granting limited regulatory relaxation to the proposal that promotes innovation in insurance in India also on a case-by-case basis. To encourage innovation with a minimal regulatory burden, SEBI shall consider relaxations, which could be either in the form of a comprehensive exemption from certain regulatory requirements or selective exemptions on a case-by-case basis, depending on the FinTech solution to be tested. But, according to the Circular, no exemptions would be granted from the investor protection framework, Know-Your-Customer and Anti-Money Laundering rules, and confidentiality of customers' information.

This peculiarity has its own *pros* and *cons*. Thus, "flexible" provision gives the opportunity to decide if it is necessary to use the relief tools or not, it can lead to the unfair granting of benefits. That is why we propose that the ability of granting these relaxations requires additional supervising tools.

The provisions of the DEF on consumers' rights protection emphasizes that the participants of the Fintech Sandbox must perform all obligations to the customers before the testing period comes to an end. This implies that the use of the RS's regime does not involve the limitation of the liability of the sandbox participants, which is extremely important. The DEF stipulates that customers should be notified of potential risks while testing is ongoing and available compensation in this

[1] IRDAI Guidelines on Operational Issues Pertaining to the Regulatory Sandbox INT/ GDL/ RSB/ 139/08/2019, available at: https://www.irdai.gov.in/ADMINCMS/cms/frmGuidelines_Layout.aspx?page=PageNo3885 (accessed 2023.11.08).

[2] SEBI Circular on Regulatory Sandbox SEBI/HO/MRD/2019/P/64, available at: https://www.sebi.gov.in/legal/circulars/jun-2020/framework-for-regulatory-sandbox_46778.html (accessed 2023.11.08).

regard. These provisions have an important impact in case of maintaining not only governmental and businesses' interests, but the interests of the consumers[1].

Regarding the protection of customers' rights, the participant of the RS must clearly inform customers about their participation in RS and get their prior consent to participate in the proposal. At the same time, the Guidelines does not contain any other protective measures neither for customers nor for counterparties.

The provisions on transparency deserve attention. Thus, to provide the necessary transparency, expenses incurred on the proposal shall be maintained separately and shown as a line item in the annual report. Moreover, if any regulatory or supervisory action taken against the proposal by any government or other regulatory authorities the participant must immediately report to the regulator with full details including the penalty imposed if any, administrative action taken and the remedial steps taken by it to prevent such recurrence.

Summing up, the Indian national model of the RS has a lot of similarities with the general model of RS, including fields of application, specially authorized body, and testing period. Notably, the regulator's attempt to ensure the transparency deserves to be commended. At the same time, the described model has a lack of protective measures for the potential customers and counterparties, which could lead to the lack of trust from the society.

Russian Model of RS

Russia does not stand aside from world trends in regulating digital innovations. Today the country is actively establishing the RS or as they are called in Russian legislation *"experimental legal regimes for digital innovations"*.

RS in Russia were initially been used for the development of Fintech. The "Guidelines for the development of Fintech in 2018-2020"[2] were approved and the first RS for testing Fintech Innovations was created by the Bank of Russia in 2018.

Furthermore, to ensure the possibility of testing technologies not only in Fintech but other areas, Federal Law "On conducting an experiment to establish a special regulation to create the necessary conditions for the development and implementation of artificial intelligence technologies in the subject of the Russian Federation — the city of federal significance in Moscow and amending Articles 6 and 10 of the Federal Law "On Personal Data" was accepted on April 24, 2020. This Law envisages implementing experiment by establishing an experimental legal regime to create conditions for the development of AI-based technologies in Moscow.

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[1] *Gromova E., Ivanc T.* (2020) "Regulatory Sandboxes (Experimental Legal Regimes for digital innovations) for BRICS", BRICS Law Journal, No. 2, pp. 10–36.

[2] Bank of Russia "*The Main Directions of Development of the Financial Technologies for the period 2018–2020*", available at: https://www.cbr.ru/StaticHtml/File/36231/ON_FinTex_2017.pdf (accessed 2023.11.08).

Regretfully, this act consists of only 8 articles, the content of which does not allow for the identification of the features of the Russian model of RS. Most of its provisions are declarative. Thus, for example, even the objectives of the setting up the RS are defined very abstractly: improving the quality of life, increasing the efficiency of state administration, increasing the efficiency of business entities. It should be noted that even considering the extremely long five-year period for testing; it will be exceedingly difficult to assess check the effectiveness of the sandbox because of its "blurred" goals.

RS is also regulated by the Federal Law "On Experimental Legal Regimes for Digital Innovations" July 31st, 2020, No 258-FZ. Such regimes envisage the temporarily controlled introduction of experimental legal regulation for the activities carried out with the use of digital innovation.

The goals of the experimental regime for digital innovations are the formation of new types of economic activities; promotion of competition; increase in the efficiency of state administration; insurance of the development of science and social sphere; improvement of general regulation.

The Law defines the directions in respect to under which circumstances it is possible to establish: medical activity; design, production and operation of vehicles; e-learning and distance learning technologies; financial market; remote sales; architectural and construction sphere; state and municipal services.

This regime is established because of the absence of general regulation or presence in the existing general regulation of requirements, prescriptions, prohibitions, restrictions in compliance with which the introduction of digital innovation is impossible or significantly difficult. The introduction of digital innovation may lead to the formation of new types of economic activities, improvement of quality and (or) availability of goods, works, services; increase in profits from entrepreneurship.

Analysis of the two aforementioned legal acts shows that they both have serious disadvantages which could be a barrier for the development of digital technologies. These disadvantages are primarily connected with the lack of transparency rules and rules connected with the customers' protection.

First, the duration of testing raises some doubts. Due to the law, the experimental regime could be established up to 3 years. Moreover, law on conducting experiment in Moscow sets the testing period for 5 years. The possibility of applying the regime of the RS in such a long period of time when a business entity is in "greenhouse" conditions may adversely affect its activities or lead to the abuse of the rights.

Secondly, the previously referred to legal acts do not reflect the conditions of the need for prior consent of customers or counterparties to interact those concerned by an experimental legal regime. With regard to the Russian RS model, it is important to note that although the Federal Law defines protective measures in relation to interested parties, their application is left to the discretion of the participant of the

experimental legal regime. This means that the RS participant may or may not use these measures. I believe this provision should be terminated from the text of the Law and usage of protective measures must become mandatory for the RS participant.

In comparison, this condition is contained in the legislation on RS in the UK, Australia, and Singapore (Fintech RS Guidelines). Its implementation helps to minimize risks associated with testing digital innovations. These measures are necessary to ensure the protection of the interests of potential consumers. According to experts' point of view, consumers can suffer from consequences of the application of the regime of RS because products, services or processes based on the new and, in some cases, "unpredictable" digital technologies are being tested[1].

Based on the identified features of the Russian model of RS it can be concluded that the domestic legislator has chosen a different way, carrying out centralized regulation of such sandboxes, and not seeking to change its regulatory role in order to weaken the impact on the market innovation. It is possible that under the current conditions and considering the Russian legal tradition, such a way is optimal for the country. At the same time, successful implementation of RS requires the elimination of existing legislation's shortcomings in the field of protection of the rights of consumers and contractors and ensuring the transparency of the activity of RS participants.

Recommendations for the development of RS in Russia and India

The considerable potential of the RS, as well as the risks connected with their inappropriate usage, require from the Russian and Indian regulators thorough and detailed work on setting up the national models of the RS based on the principles of transparency and protection of the consumers' rights (trustworthy approach).

Russia and India should develop cooperation in the sphere of setting up and operating of the RS and set up guidelines to the national and international policy on RS.

The following are the main recommendations, based on the trustworthy approach and a balance of public and private interests of regulators, business entities, customers and counterparties:

— Regulators from both countries must develop clear and transparent criteria for admission of the potential participants to the RS. To promote the credibility from the society and potential participants of the sandbox, the aforementioned standards should be unified for all participants. Otherwise, it could lead to corruption and inequality.

— It is necessary to establish a flexible testing period, which, on the one hand, will allow to check the viability of the innovation and answer the question on whether the existing regulation needs to be changed or not. On the other hand,

[1] *Bromberg L., Godwin A., Ramsay I.* (2017) "Fintech Sandboxes: Achieving a Balance between Regulation and Innovation", Journal of Banking and Finance Law and Practice, Vol. 28, No. 4, pp. 314–336.

a period of testing should not be too long to stay out of the "greenhouse" conditions. E.g., a testing period in Russia which is 3–5 years is excessive and can lead to abuse. Nevertheless, in my opinion, this period should not be defined individually case-by-case (as done in China), because it could lead to the lack of transparency.

— We need to establish a set of measures for the protection of potential customers and counterparties as notification about the fact of the testing within the RS, necessary prior consent of mentioned entities, liability insurance and a range of compensations. The Mentioned measures should not be considered as a barrier for the development of digital innovations, but as a means to get over the criticism of RS in order to bypass supervisory requirements.

— Moreover, as it was mentioned above, India has seen Russia as a key part of its strategy to balance China. In this regard, both countries should consider the creation of the Russian-Indian RS to test digital technologies to promote innovations made in these countries that can compete with their foreign counterparts. Notably, there are currently 12 countries across the world united to test their innovations within Global RS or "Sandbox for Sandboxes"[1].

Conclusion

The willingness of the Russian Federation and the Republic of India to develop digital technologies to solve the problems of economic growth and other important problems requires improvement of the existing regulation of activities related to the application of such innovations. The implementation of such an unorthodox tool promoting the creation of competitive digital innovations as RS, requires well-considered and balanced governmental decisions. These decisions should, on the one hand, stimulate innovative development, on the other hand, refrain from putting innovation at the center of the agenda, losing public confidence in the new regulatory instruments.

Defined peculiarities of national models of RS of the Russian Federation and the Republic of India and recommendations for improvement of these models based on the trustworthy approach could be used for the creation of the international legislation on RS across the world. Also, these recommendations could be applied for the law-making in the sphere of RS in separate countries to create an effective and trustworthy national model of RS.

Moreover, results achieved in this research article could be used as a basis for further research in the sphere of RS and other tools to promote trustworthy technologies in the era of the digital transformation.

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[1] *Global Financial Innovation Network (GFIN): Consultation document*, August 2018, available at: https://www.fca.org.uk/publication/consultation/gfin-consultation-document.pdf (accessed 2023.11.08).

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FEATURES OF KEYSTROKE DYNAMICS AND THEIR FORENSIC SIGNIFICANCE: LITERATURE REVIEW

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Abstract. *Keystroke dynamics is a phenomenon deeply studied in computer science. Its research began in the second half of the 1970s and immediately yielded positive results: keystroke dynamics was found to be unique and relatively stable — ergo, significant for identification. The first studies focused on three features of keystroke dynamics: typing speed, key press time, and the time between two consecutive key presses. Today, research on this topic has not stopped, but, on the contrary, has intensified due to the general increase in interest in biometric characteristics of personality. Scientists identify new features of keyboard handwriting that form the basis of identification: the strength of keystrokes, the use of service keys, the nature of overlapping, the nature and frequency of typing irregularities, arrhythmic input, spatial orientation of keystrokes and others. At the same time, printed texts are rapidly replacing manuscripts every year, which leads to the emergence of a new forensic task: to identify the executor of a printed text with criminal content (extremist material on the Internet; a post in a "death group" on a social network; information on the location of a narcotic substance, etc.). In this case, the legal and forensic study of keystroke dynamics becomes useful,*

because it is through it that it is possible to establish who exactly typed the text, avoiding the prosecution of an innocent person whose account was used by the attackers. However, for this to be possible, lawyers must adapt the results achieved by colleagues from computer science to the normative procedure of criminal proceedings, which requires, first of all, a comprehensive understanding of the current level of research in this area and the features of keystroke dynamics, which will then form a forensically significant set necessary for accurate identification. Scientists already pay their attention to this phenomenon, but the features they suggest are not exhaustive and even the most widespread, in this regard, there is an obvious need to systematize the available developments and identify those features of keystroke dynamics, which are the highest priority for their use in order to solve and investigate crimes. It is to present this information that the present work has been prepared.

Keywords: *keyboard handwriting, biometric characteristic, biometrics, forensic identification, keyboard handwriting features, performer identification, computer crimes.*

Introduction

Biometric data have always been of particular interest to forensic science: just as they are used in the field of personal and commercial (in banks, for example[1]) information security[2], they can be used to identify a person for the purposes of crime detection and investigation[3]. Today, the interest of the professional community in this area is becoming more and more noticeable, as modern technologies allow to study previously inaccessible features of a person, significantly increasing the variety of data that form the basis of biometric identification. Thus, in the works devoted to this topic, the following sources are considered or simply named: appearance

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[1] *Mondol S. K., Tang W., Hasan S. A.* A Case Study of IoT Based Biometric Cyber Security Systems Focused on the Banking Sector // International Conference on Expert Clouds and Applications, India, March 2023. 2023. Pp. 1–13.

[2] *Golovenchik G. G.* Problemy kiberbezopasnosti v usloviyakh tsifrovoy transformatsii ekonomiki i obshchestva [Problems of cyber security in the conditions of digital transformation of economy and society] // Ekonomika. Upravlenie. Innovatsii [Economics. Management. Innovations]. 2018. No. 2 (4). Pp. 23–33; *Siahaan C. R. P., Chowanda A.* Spoofing keystroke dynamics authentication through synthetic typing pattern extracted from screen-recorded video // Journal of Big Data. 2022. Vol. 9 (111). Pp. 1–29.

[3] For example: *Ekwunife R. A., Ojiaku K., Ukeje I. O.* Evaluation of CCTV And Biometrics as ICT Tools for Curbing Criminality in Nigeria: A Study of Ebonyi State Police Command Abakaliki // Akpauche: International Journal of Arts and Social Sciences. 2020. Vol. 1. No 2. Pp. 96–105; *Amer M., Bari M. A., Khare A.* Fingerprint Image Identification for Crime Detection // International Journal for Advanced Research in Science & Technology. 2022. Vol. 12. Issue 10. Pp. 144–126.

in general, papillary pattern, iris pattern, face shape, ear shape, lip pattern, vein pattern, flexor lines, gait, handwriting, keystroke dynamics, voice[1]. These biometric properties in most works are divided into two groups[2]: the first group, called "hard biometrics" includes biological (morphological, static) characteristics, which are inherent to a person from birth and manifested as an integral part of his body, are visible; the second group — "soft biometrics" — combines dynamic (physiological, behavioral) characteristics, which are manifested in the process of any human activity, and outside its context cannot be recorded by an outsider. The dichotomous approach is the most widespread, but it is not the only one: in scientific papers we can find another classification, within the framework of which morphological (related to the structure of individual body parts), behavioral (coinciding with what we call dynamic) and biological (characterizing the "internal part of the organism's life") traits are distinguished[3]. Today, more and more attention is paid to the latter group of behavioral characteristics, because unlike all the others, they cannot (from the point of view of modern technologies) be stolen or forged, and therefore, they allow to ensure greater information security and achieve more effective identification of the subject-carrier[4].

We will not dwell on the review of all behavioral characteristics, but given the tendency to abandon paper documents and transfer interaction, including official, into electronic form, we believe that the study of keystroke dynamics deserves special attention, especially in the framework of the low study of this issue in the legal sphere.

The present work is aimed at reviewing and systematizing the research of various features of keystroke dynamics, the increasing number of which allows us to talk about the increasing identification significance of this personal characteristic. In addition, we consider it necessary to pay special attention to the assessment of the possibility and admissibility of obtaining information about these or those features in the framework of criminal proceedings.

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[1] *Zhu H., Li C., Yu B. [et al].* Research on the Key Application of Computer Biometric Technology in Power Self-Service Terminal // Advances in Artificial Intelligence, Big Data and Algorithms / G. Grigoras and P. Lorenz (Eds.). 2023. Pp. 943–948; *Shangina I.Yu.* Tekhnologii biometricheskoy identifikatsii: mirovaya i Rossiyskaya praktiki [Biometric identification technologies: world and Russian practice] // Innovatsii. Nauka. Obrazovanie [Innovations. Science. Education]. 2020. No. 18. Pp. 151–156; *Vacca J. R.* Biometric technologies and verification systems. Oxford: USA Linacre House, 2007. 625 p.

[2] *Dai X., Zhao R., Hu P., Munteanu A.* KD-Net: Continuous Keystroke Dynamics Based Human Identification from RGB-D Image Sequences // Sensor. 2023. Vol. 23 (20). Pp. 2–3.

[3] *Syed I. S. Z.* Soft Biometrics for Keystroke Dynamics. Computer Vision and Pattern Recognition. Universit´e de Caen Basse-Normandie, 2014. P. 2.

[4] *Stylios I., Kokolakis S., Thanou O., Chatzis S.* Behavioral Biometrics & Continuous User Authentication on Mobile Devices: A Survey // Information Fusion. 2021. Volume 66. Pp. 76–99.

Development of knowledge about keystroke dynamics

Keystroke dynamics, which is obvious from the term itself, appeared at the same time (or almost at the same time, as it takes, according to researchers' estimates, 6 months to form the typing skill[1]) with the appearance of the first computers, although some of its prototypes were observed in radio operators[2] and typists[3], with which we can quite agree — when pressing the keys, including typewriter keys, in any case the same muscles and brain departments that give motor commands[4]. However, as a systemic phenomenon, available and really important for scientific study, keystroke dynamics originated only from the era of widespread use of computer devices.

In 1975, the first paper was published that substantiated the possibility of identifying users of computer systems on the basis of fixation of typing patterns[5]. After that, independent scientific teams conducted several experiments among secretaries and programmers, establishing the stability of speed features, their reproducibility and uniqueness, which subsequently made it possible to draw an unambiguous conclusion about the prospect of using keystroke dynamics for information security purposes by granting access to the system only to the person whose keystroke dynamics samples had been stored earlier[6]. In 1980, a detailed scientific report was prepared in which, based on theoretical and experimental

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[1] *Vorona V. A., Kostenko V. O.* Biometricheskie tekhnologii identifikatsii v sistemakh kontrolya i upravleniya dostupom [Biometric identification technologies in access control and management systems] // Computational Nanotechnology. 2016. No. 3. P. 239.

[2] *Bryan W. L., Harter N.* Studies in the physiology and psychology of the telegraphic language // Psychological review. 1987. № 4 (1). Pp. 27–53.

[3] *Nikulicheva E. O.* Analiz klaviaturnogo pocherka kak metod identifikatsii lichnosti [Analysis of keyboard handwriting as a method of personal identification] // Aktualnye voprosy sudebnoy psikhologicheskoy ekspertizy i kompleksnoy ekspertizy s uchastiem psikhologa. Perspektivy nauchnogo i prikladnogo issledovaniya pocherka: Sbornik materialov III mezhdunarodnoy nauchno-prakticheskoy konferentsii, Kaluga, 16–19 maya 2019 goda [Actual issues of forensic psychological examination and complex examination with the participation of a psychologist. Perspectives of scientific and applied research of handwriting: Collection of materials of the III International Scientific and Practical Conference, Kaluga, 16–19 May 2019] / Pod redaktsiey V. F. Engalycheva, E. V. Leonovoy. Kaluga: FBGOU VPO "Kaluzhskiy gosudarstvennyy universitet im. K. E. Tsiolkovskogo", 2019. P. 56.

[4] *Syed Idrus S. Z.* Soft Biometrics for Keystroke Dynamics. Computer Vision and Pattern Recognition. Universit´e de Caen Basse-Normandie, 2014. P. 9.

[5] *Spillane R.* Keyboard Apparatus for Personal Identification // IBM Technical Disclosure Bulletin. 1975. Vol. 17. № 3346.

[6] For example: *Monrose F., Rubin A.* Authentication via Keystroke Dynamics // Proceedings of the Fourth ACM Conference on Computer and Communication Security. 1997. Pp. 48–56; *Joyce R., Gupta G.* Identity authorization based on keystroke latencies // Commun. ACM. 1990. Vol. 33 (2). Pp. 168–176.

data, the possibility of authenticating users by analyzing the time of a set of digrams (two letters occurring sequentially in the text) was confirmed[1]. Let us point out that in Russia the greater informativeness of digrams (n-grams), compared to single characters, began to be discussed not so long ago[2].

In parallel with private studies, state-supervised studies were conducted. Thus, in 1977, a detailed report was published for the U.S. Armed Forces, which described more than 30 biometric indicators of personality, among which special attention was paid to typing style[3]. Scientists proposed an approximate plan for estimating typing speed for user identification, developed a corresponding program and conducted a successful experiment, which also proved that for one person the speed of typing paired characters in a name and the duration of pauses remain stable and are not reproduced by other persons. It should also be mentioned that the first studies of keystroke dynamics considered only its manifestations when users typed their own name[4], but later they began to talk about the possibility of fixing the features when typing a key phrase or arbitrary text[5].

In domestic science, attention to the phenomenon of keystroke dynamics was paid only at the end of the XX century, immediately defining it as a rather promising technology: for example, S.P. Rastorguev pointed out that identification by keystroke dynamics due to its simplicity seems to be a higher priority than the identification of a person by iris[6]. Today, research into this phenomenon largely repeats the conceptual framework established in the last century, differing in three main areas:

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[1] *Gaines R., Lisowski W., Press S., Shapiro N.* Authentication by keystroke timing: some preliminary results. Rand Rep. R-2560-NSF, Rand Corporation, 1980. 51 p.

[2] For example: *Varnashina P.D., Bushueva M.E.* Issledovanie emotsionalnogo sostoyaniya cheloveka po klaviaturnomu pocherku [Study of the emotional state of a person by keyboard handwriting] // Informatsionnye sistemy i tekhnologii — 2019: Sbornik materialov XXV Mezhdunarodnoy nauchno-tekhnicheskoy konferentsii, Nizhniy Novgorod, 19 aprelya 2019 goda. Nizhniy Novgorod: Nizhegorodskiy gosudarstvennyy tekhnicheskiy universitet im. R.E. Alekseeva [Information Systems and Technologies — 2019: Proceedings of the XXV International Scientific and Technical Conference, Nizhny Novgorod, 19 April 2019. Nizhny Novgorod: R.E. Alekseev Nizhny Novgorod State Technical University], 2019. Pp. 591–595.

[3] *Forsen G., Nelson M., Staron R.Jr.* Personal attributes authentication techniques. Technical Report RADC-TR-77-333. Rome: Air Development Center, 1977. Pp. D-116–D-122.

[4] *Forsen G., Nelson M., Staron R.Jr.* Personal attributes authentication techniques. Technical Report RADC-TR-77-333. Rome: Air Development Center, 1977. P. D-118; *Brown M., Rogers S.J.* User identification via keystroke characteristics of typed names using neural networks // Int. J. Man-Mach. Stud. 1993. Vol. 39 (6). Pp. 999–1014.

[5] *Pisani P.H., Lorena A.C.* A systematic review on keystroke dynamics // Journal of the Brazilian Computer Society. 2013. Vol. 19 (4). P. 575.

[6] *Rastorguev S.P.* Programmnye metody zashchity informatsii v kompyuterakh i setyakh [Programme methods of information protection in computers and networks]. M.: Izdatelstvo Agentstva "Yakhtsmen", 1993. P. 64.

1) the complexity of technological solutions proposed for automatic identification of users by keystroke dynamics features; 2) the variety and diversity of investigated keystroke dynamics features; 3) the consideration of confounding factors.

We will dwell only on the second aspect, having previously summarized the above described: at the initial stages of development of knowledge about keystroke dynamics, scientists investigated only velocity — i.e. the number of characters typed by the operator per unit of time — or temporal characteristics — the retention time of individual keys and intervals between successive presses. This approach is well-established in science and can rightfully be considered traditional: often modern studies are limited to the description of these indicators[1], and if a wider list of features is given in the work, speed, retention time and interval duration are definitely mentioned.

Modern system of keystroke dynamics features

As it was mentioned earlier, over half a century of research, scientists have revealed a considerable variety of keystroke dynamics features. The analysis of more than 600 works by various authors on the corresponding topic allows us to give a generalized list of these features, structured in descending order of their prevalence (see Table No. 1).

Table No. 1

Frequency of mentioning keystroke dynamics in scientific studies

Feature	Frequency of mentioning (%)[2]
Key hold time	100
Intervals between keystrokes	100

[1] For example: *Guzik V. F., Desyaterik M. N.* Biometricheskiy metod autentifikatsii polzovatelya [Biometric method of user authentication] // Izvestiya TRTU. 2000. No. 2 (16). Pp. 129–133; *Lozhnikov P. S., Sulavko A. E., Buraya E. V., Eremenko A. V.* Sposoby generatsii klyuchevykh posledovatelnostey na osnove klaviaturnogo pocherka [Methods of key sequence generation based on keyboard handwriting] // Dinamika sistem, mekhanizmov i mashin [Dynamics of systems, mechanisms and machines]. 2016. No. 4. P. 265–270; *Khmyz A. I.* Razgranichenie identifikatsionnykh priznakov pri ustanovlenii interaktivnogo polzovatelya [Distinguishing the identification attributes when establishing an interactive user] // Tsifrovaya transformatsiya: obrazovanie, nauka, obshchestvo. Moskva: Avtonomnaya nekommercheskaya organizatsiya Tsentralnyy nauchno-issledovatelskiy institut russkogo zhestovogo yazyka [Digital Transformation: Education, Science, Society. Moscow: Autonomous non-profit organization Central Research Institute of Russian Sign Language], 2019. P. 349.

[2] Of course, we have not studied all the works on this topic, but the available sample allows us to generalize, which is reflected in this table.

Table No. 1

Feature	Frequency of mentioning (%)
Input speed[1].	64
Characteristic of overlaps — the time during which the previous key is not yet released when a key is pressed; sometimes this characteristic is considered as a manifestation of the interval feature (negative interval)[2].	62
Frequency and content of errors made by the user[3]	19
Use of service keys (one can also encounter proposals to consider the frequency of accessing them not in the aggregate, but for each specific key (combination of keys)[4]; in turn, some authors, on the contrary,	15

[1] For example: *Alekseev A. A., Voevodin V. A., Prokhorova V. V.* Klaviaturnyy pocherk kak sredstvo autentifikatsii subekta dostupa k informatsionnym resursam [Keyboard handwriting as a means of authentication of the subject of access to information resources] // Materialy nauchno-tekhnicheskoy konferentsii "Mikroelektronika i informatika — 2022": Sbornik statey konferentsii, Moskva, 21–22 aprelya 2022 goda. Moskva: Natsionalnyy issledovatelskiy universitet "Moskovskiy institut elektronnoy tekhniki" [Proceedings of the Scientific and Technical Conference "Microelectronics and Informatics — 2022": Collection of conference papers, Moscow, 21-22 April 2022. Moscow: National Research University "Moscow Institute of Electronic Technology"], 2022. P. 4; *Boriskin S. M.* Razrabotka protsedur, realizuyushchikh autentifikatsiyu i registratsiyu parametrov kompyuternogo pocherka pri kompleksnom podkhode k autentifikatsii [Development of procedures realising authentication and registration of computer handwriting parameters at the complex approach to authentication] // Estestvennye i tekhnicheskie nauki [Natural and Technical Sciences]. 2010. No. 5 (48). P. 474; *Liu W.-M., Yeh C.-L., Chen P.-W. [et al].* Keystroke Biometrics as a Tool for the Early Diagnosis and Clinical Assessment of Parkinson's Disease // Diagnostics. 2023. Vol. 13 (19). No. 3061. P. 5.

[2] For example: *Sulavko A. E., Shalina E. V.* Biometricheskaya autentifikatsiya polzovateley informatsionnykh sistem po klaviaturnomu pocherku na osnove immunnykh setevykh algoritmov [Biometric authentication of information system users by keyboard handwriting based on immune network algorithms] // Prikladnaya informatika [Applied Informatics]. 2019. V. 14. No. 3 (81). P. 40; *Presnukhin R. S.* Postroenie modeli protsedury autentifikatsii dlya doverennogo nositelya informatsii na baze flash-nakopitelya [Building a model of authentication procedure for a trusted flash-based storage medium] // Vestnik Nauki i Tvorchestva [Bulletin of Science and Creativity]. 2016. No. 5 (5). P. 382.

[3] For example: *Latt Ch. V.* Vliyanie izmerennykh kharakteristik "pocherka" polzovatelya vychislitelnoy seti na veroyatnost ego identifikatsii logicheskoy neyronnoy setyu po etalonu [Influence of the measured characteristics of the "handwriting" of a computer network user on the probability of his identification by a logical neural network according to the standard] // Estestvennye i tekhnicheskie nauki [Natural and Technical Sciences]. 2011. No. 2 (52). P. 171; *Kolakowska A.* Generating training data for SART-2 keystroke analysis module // Proceedings of the 2nd International Conference on Information Technology (ICIT'10). 2010. Pp. 57–60.

[4] *Latt C. V.* Influence of the measured characteristics of the «handwriting» of a computer network user on the probability of his identification by a logical neural network according to the standard // Natural and Technical Sciences. 2011. № 2 (52). P. 420.

Table No. 1

Feature	Frequency of mentioning (%)
propose to specifically exclude the information about pressing service keys from the number of fixed features[1])[2].	
Intervals between presses of dual and strobed sequentially arranged groups of characters (n-graphs / n-grams)[3]	12
Vibro-sound characteristics of printing[4]	8
Arrhythmicity of printing — characteristic of deviations exceeding the confidence interval at normal distribution[5]	6

[1] *Vorona V. A., Kostenko V. O.* Biometricheskie tekhnologii identifikatsii v sistemakh kontrolya i upravleniya dostupom [Biometric identification technologies in access control and management systems] // Computational Nanotechnology. 2016. No. 3. P. 238.

[2] For example: *Turutina E. E.* Analiz metodov elektronnoy i biometricheskoy autentifikatsii v sistemakh kontrolya dostupom [Analysis of electronic and biometric authentication methods in access control systems] // Vestnik NTsBZhD [Bulletin of the Life Safety Research Center]. 2021. No. 2 (48). P. 171; *Varlamova S. A., Vavilina E. A.* Identifikatsiya polzovatelya na osnove klaviaturnogo pocherka [User identification based on keyboard handwriting] // Innovatsionnoe priborostroenie [Innovation Instrument Engineering]. 2023. V. 2. No. 3. Pp. 67–71.

[3] For example: *Princy A. T., Lakshmi P.A, Suvanam S. B.* A Review of Behaviometric Techniques for User Authentication // IOSR Journal of Computer Engineering (IOSR-JCE). 2016. Pp. 11–14; *Varnashina P. D., Bushueva M. E.* Issledovanie emotsionalnogo sostoyaniya cheloveka po klaviaturnomu pocherku [Study of the emotional state of a person by keyboard handwriting] // Informatsionnye sistemy i tekhnologii — 2019: Sbornik materialov XXV Mezhdunarodnoy nauchno-tekhnicheskoy konferentsii, Nizhniy Novgorod, 19 aprelya 2019 goda. Nizhniy Novgorod: Nizhegorodskiy gosudarstvennyy tekhnicheskiy universitet im. R. E. Alekseeva [Information Systems and Technologies — 2019: Proceedings of the XXV International Scientific and Technical Conference, Nizhny Novgorod, 19 April 2019. Nizhny Novgorod: R. E. Alekseev Nizhny Novgorod State Technical University], 2019. Pp. 591–595; *Chen M. H., Leow A., Ross M. K. [et al].* Associations between smartphone keystroke dynamics and cognition in MS // Digital Health. 2022. Vol. 8. P. 3. DOI: 10.1177/20552076221143234.

[4] For example: *Nonaka H., Kurihara M.* Sensing Pressure for Authentication System Using Keystroke Dynamics // International Journal of Computer, Control, Quantum and Information Engineering. 2007. Vol. 1. № 1. Pp. 152–155; *Fedorov V. M., Rublev D. P.* Obrabotka vibroakusticheskikh shumov, voznikayushchikh pri rabote polzovatelya s klaviaturoy [Processing of vibroacoustic noises occurring when a user works with a keyboard] // Izvestiya YuFU. Tekhnicheskie nauki [Bulletin of the Southern Federal University. Technical Sciences]. 2012. No. 12 (137). Pp. 75–81; *Nguyen T. T., Le T. H., Le B. H.* Keystroke dynamics extraction by independent component analysis and bio-matrix for user authentication // Proceedings of the 11th Pacific Rim International Conference on Trends in Artificial Intelligence, Daegu, Republic of Korea. 2010. Pp. 477–486.

[5] For example: *Sapiev A. Z.* Kompyuternyy pocherk kak sposob identifikatsii polzovateley v seti [Computer handwriting as a way to identify users in the network] // Vestnik Vologodskogo gosudarstvennogo universiteta. Seriya: Tekhnicheskie nauki [Bulletin of Vologda State University. Series: Technical Sciences]. 2021. No. 4 (14). P. 17; *Bryukhomitskiy Yu. A., Kazarin M. N.* Vydelenie informativnykh biometricheskikh parametrov v sistemakh klaviaturnogo monitoring [Selection of informative biometric parameters in keyboard monitoring systems] // Informatsionnoe protivodeystvie ugrozam terrorizma [Information counteraction to threats of terrorism]. 2010. No. 14. P. 143.

Table No. 1

Feature	Frequency of mentioning (%)
Press force[1]	3
Spatial orientation of presses[2]	2

Let us briefly characterize the features given in Table No. 1.

1) Key pressing (holding) duration is the time from the beginning of pressure on the key to its complete release, measured in milliseconds (ms) and calculated as the difference between two points: the time of the beginning of pressure on the key and the time of its release.

2) Duration of press intervals — the time between the release of one key and the beginning of pressing the next key. It can take negative values if the next key is pressed while the previous key is still pressed. It is also calculated as the difference between two time events.

As it was mentioned earlier, the interval can be considered between the presses of individual keys linearly or within groups of typical n-grams (letter combinations, most often of 2–3 characters).

3) Input speed — the number of characters typed per unit of time (e.g. a minute).

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[1] For example: *Le T. H., Le B.* Keystroke dynamics extraction by independent component analysis and bio-matrix for user authentication // *Zhang B. T., Orgun M. A.* (eds) PRICAI 2010: Trends in Artificial Intelligence. PRICAI 2010. Lecture Notes in Computer Science. Vol 6230. Berlin, Heidelberg: Springer, 2010. Pp. 477–478; *Lv H.-R., Wang W.-Y.* Biologic verification based on pressure sensor keyboards and classifier fusion techniques // IEEE Transactions on Consumer Electronics. 2006. Vol. 52 (3). Pp. 1057–1063; *Eremenko A. V., Sulavko A. E., Mishin D. V., Fedotov A. A.* Identifikatsionnyy potentsial klaviaturnogo pocherka s uchetom parametrov vibratsii i sily nazhatiya na klavishi [Identification potential of keyboard handwriting taking into account the parameters of vibration and force of pressing the keys] // Prikladnaya informatika [Applied Informatics]. 2017. V. 12. No. 1 (67). P. 83.

[2] *Nikulicheva E. O.* Analiz klaviaturnogo pocherka kak metod identifikatsii lichnosti [Analysis of keyboard handwriting as a method of personal identification] // Aktualnye voprosy sudebnoy psikhologicheskoy ekspertizy i kompleksnoy ekspertizy s uchastiem psikhologa. Perspektivy nauchnogo i prikladnogo issledovaniya pocherka: Sbornik materialov III mezhdunarodnoy nauchno-prakticheskoy konferentsii, Kaluga, 16–19 maya 2019 goda [Actual issues of forensic psychological examination and complex examination with the participation of a psychologist. Perspectives of scientific and applied research of handwriting: Collection of materials of the III International Scientific and Practical Conference, Kaluga, 16–19 May 2019] / Pod redaktsiey V. F. Engalycheva, E. V. Leonovoy. Kaluga: FBGOU VPO "Kaluzhskiy gosudarstvennyy universitet im. K. E. Tsiolkovskogo", 2019. P. 56; *Batskikh A. V., Drovnikova I. G., Zarubin V. S.* Bazovye aspekty modifikatsii podsistem upravleniya dostupom k informatsii v avtomatizirovannykh sistemakh organov vnutrennikh del na osnove issledovaniya klaviaturnogo pocherka polzovateley [Basic aspects of modification of subsystems of information access control in automated systems of internal affairs bodies on the basis of research of keyboard handwriting of users] // Vestnik Voronezhskogo instituta MVD Rossii [Bulletin of the Voronezh Institute of the Ministry of Internal Affairs of Russia]. 2022. No. 4. P. 22.

4) Characterization of errors made by the user implies evaluation of two independent features: first, the frequency of such violations, i.e. the percentage ratio of errors to the total text volume; second, the typical user errors themselves, i.e. those violations of typing correctness that are peculiar to a particular person and occur regularly.

It should be noted that the works often combine errors and misprints, whereas in our opinion, they are independent types of printing irregularities and allow us to draw various conclusions about the personality of the executor of the printed text.

Thus, errors are made in connection with the presence of certain gaps in education, when a person, not having sufficient knowledge about the correct spelling of a word or the placement of punctuation marks, reproduces the variant that seems to him to correspond to the norms of the language. In turn, systemic typos appear due to movement coordination disorders, when a person knows how a word (sentence) should be written, but at speed loses or duplicates individual letters or signs (in particular, spaces), prints the wrong letter, distorts the ending, which violates coordination, etc.

5) Frequency of using service keys — the number of times the user accesses the keys, the signal from which does not create any readable character, during a working session.

Here it is also necessary to take into account the frequency of user access to the keys that change the functionality of other keys, change the keyboard layer, etc. when combined with other keys.

6) Vibro-sound characteristics of printing are not so much a feature as an indicator from which various attributes can be derived: key holding time, intervals between presses, printing speed, etc. The potential use of this indicator is based on the individuality of the sound of each keyboard key[1].

7) Typing rhythmicity — stability of all other features, determined through the evaluation of deviations from the formed stereotype of the user's keystroke dynamics within the confidence interval.

8) Pressure force — the amount of force with which the user exerts pressure on the key.

This attribute can also be represented through the description of the pressing depth, i.e. the distance between the key position in the "resting" state and the maximum point of its deepening when pressed by the user.

9) Spatial orientation of presses — specific coordinates of the place where the user's fingers make contact with the key.

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[1] *Harrison J., Toreini E., Mehrnezhad M.* A Practical Deep Learning-Based Acoustic Side Channel Attack on Keyboards (Preprint) // IEEE European Symposium on Security and Privacy Workshop, SiLM'23 (EuroS&PW). 2023. URL: https://arxiv.org/abs/2308.01074 (accessed: 23.12.2023).

It should be noted that the Table No. 1. does not reflect those features that occur in less than 1% of the studied works, in particular, such as the model of making corrections[1], the fact of using the main or additional keyboard and typical techniques and methods of working on the keyboard[2]. Such a rare consideration of them, as it seems, may be due to insufficient scientific elaboration, as well as the low identification significance of these features, which, however, is not a reason to completely ignore them, because together with other characteristics, they are able to form a forensically significant set necessary for the formation of the identification field.

Some authors also propose to pay attention to the stylistic features of the text, words and phrases specific to the user within the study of keystroke dynamics[3]. Without disputing the identification significance of this feature, we note that its study is located in the sphere of linguistic examination, which is designed to complement any handwriting research, but cannot be replaced by the latter.

Features of keystroke dynamics: forensic aspect

Legal works devoted to the topic of keystroke dynamics also consider its features. A very detailed characterization is given by E. I. Foygel, who notes that the most important of them are: the dynamics of input (the time between pressing the keys and the time of their retention), typing speed (the time it takes the user to search for the desired character on the keyboard), typing speed (the result of dividing the number of characters by the typing time), the intensity of pressure (the force of

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[1] *Panfilova I. E., Karpova N. E.* Issledovanie vliyaniya sostoyaniya polzovatelya na kachestvo autentifikatsii po klaviaturnomu pocherku [Investigation of the influence of the user state on the quality of authentication by keyboard handwriting] // Dinamika sistem, mekhanizmov i mashin [Dynamics of systems, mechanisms and machines]. 2021. V. 9. No. 4. P. 71.

[2] *Nikulicheva E. O.* Analiz klaviaturnogo pocherka kak metod identifikatsii lichnosti [Analysis of keyboard handwriting as a method of personal identification] // Aktualnye voprosy sudebnoy psikhologicheskoy ekspertizy i kompleksnoy ekspertizy s uchastiem psikhologa. Perspektivy nauchnogo i prikladnogo issledovaniya pocherka: Sbornik materialov III mezhdunarodnoy nauchno-prakticheskoy konferentsii, Kaluga, 16–19 maya 2019 goda [Actual issues of forensic psychological examination and complex examination with the participation of a psychologist. Perspectives of scientific and applied research of handwriting: Collection of materials of the III International Scientific and Practical Conference, Kaluga, 16–19 May 2019] / Pod redaktsiey V. F. Engalycheva, E. V. Leonovoy. Kaluga: FBGOU VPO "Kaluzhskiy gosudarstvennyy universitet im. K. E. Tsiolkovskogo", 2019. P. 56.

[3] *Sapiev A. Z.* Priznaki identifikatsii polzovateley informatsionnykh sistem po kompyuternomu pocherku [Signs of identification of information systems users by computer handwriting] // Informatsionnye tekhnologii v modelirovanii i upravlenii: podkhody, metody, resheniya: IV Vserossiyskaya nauchnaya konferentsiya s mezhdunarodnym uchastiem: Sbornik materialov, Tolyatti, 20–22 aprelya 2021 goda [Information technologies in modelling and management: approaches, methods, solutions: IV All-Russian scientific conference with international participation: Proceedings, Togliatti, 20-22 April]. Tolyatti: Tolyattinskiy gosudarstvennyy universitet, 2021. P. 159.

impact on the keyboard key), the duration and structure of pauses and delays, the features of the implementation of keys (use of keys for typing certain characters)[1].

I. Z. Fedorov proposes to limit the list of keystroke dynamics features at the normative level to the following characteristics: "input speed — the ratio of the number of entered characters to the typing time; input dynamics — the time intervals between keystrokes and their retention; frequency of typing errors; characteristic use of keys — which function keys the operator presses when performing certain operations when typing an electronic text"[2].

As we can see, both works almost completely reproduce a single set of features, without justifying their choice and the reasons why they are "the most important". The results of our analysis, reflected in Table No. 1, show that the selected attributes are the most widespread in terms of frequency of their mentioning in specialized computer-technical works, but, for example, the nature of overlapping, which is considered more often than the frequency of errors, has not been reflected in legal studies. It also seems not quite correct to limit the list of features that will be further studied for identification to a "magic number" for memory retention: 4–7 items[3].

This is especially important if we take into account that "the correlation between the features of different categories in almost all cases does not exceed 0.7 and mainly corresponds to a weak dependence on the Cheddock scale[4] or is absent at all, in some cases (no more than 15%) the dependence is moderate, very rarely noticeable (less than 3%). That is, the information in the attributes from different categories is not duplicated, the channels for obtaining the attributes can be considered weakly

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[1] *Foygel E. I.* Nekotorye vozmozhnosti ispolzovaniya povedencheskoy biometrii v rassledovanii prestupleniy [Some possibilities of using behavioral biometrics in crime investigation] // Razvitie rossiyskogo obshchestva: vyzovy sovremennosti: Materialy natsionalnoy nauchno-prakticheskoy konferentsii s mezhdunarodnym uchastiem, posvyashchennoy 90-letiyu Baykalskogo gosudarstvennogo universiteta, Irkutsk, 15–16 oktyabrya 2020 goda. Irkutsk: Baykalskiy gosudarstvennyy universitet [Development of Russian society: challenges of modernity: Proceedings of the national scientific-practical conference with international participation, dedicated to the 90th anniversary of Baikal State University, Irkutsk, 15–16 October 2020. Irkutsk: Baikal State University], 2021. P. 418.

[2] *Fedorov I. Z.* K voprosu ob ustanovlenii ispolnitelya elektronnogo teksta po klaviaturnomu pocherku pri raskrytii i rassledovanii prestupleniy [To the issue of establishing the executor of electronic text by keyboard handwriting in the detection and investigation of crimes] // Vestnik Barnaulskogo yuridicheskogo instituta MVD Rossii [Bulletin of Barnaul Law Institute of the Ministry of Internal Affairs of Russia]. 2019. No. 2 (37). P. 115.

[3] *Miller G. A.* The Magical Number Seven, Plus or Minus Two: Some Limits on our Capacity for Processing Information // The Psychological Review. 1956. Vol. 63. Pp. 81–97.

[4] The Cheddock scale is used in statistical research to assess the influence of one (quantitative) indicator on another (qualitative) one, i.e. to determine correlation relations. If the value of the correlation coefficient is from 0.1 to 0.3, the relationship is considered insignificant; 0.4–0.5 — moderate; 0.6–0.7 — appreciable; 0.8–0.9 — high; 0.91–0.99 — strong. In the study whose findings are reported, the mean correlation coefficient was 0.37.

dependent"[1]. It follows that the collection and study of the maximum possible number of various features will increase the accuracy of identification of the executor of the printed text. However, this is not completely possible in the conditions of criminal proceedings.

Thus, for example, to record the force of pressing it is necessary to develop a modernized keyboard, in which it is necessary to install a pressure sensor under each key, which is not economically feasible; when assessing vibration and sound characteristics, additional equipment equipped with an accelerometer is required (in this capacity it can be smartphone, which is constantly accessible to the subjects conducting criminal prosecution); to record the spatial orientation of keystrokes, the number of fingers used, the distribution of zones on the keyboard between different fingers requires constant external observation, which is also very difficult to ensure in the conditions of criminal proceedings and, even more so, before the initiation of criminal proceedings. In turn, all the other features that have been listed, as well as some derivatives of them, can be recorded on a special device — keylogger. Thus, for example, it seems possible, within the framework of operative-search activity of obtaining computer information, to tacitly send a program to the computer device of the person under surveillance, which will record the way this person types and transmit the specified information to the law enforcement agency, after which it will be possible to reliably confirm that the specified person was engaged in the publication and dissemination of criminal (e.g. extremist) texts, carried out a conspiracy to commit a crime in messenger, even if he or she used various means of anonymization.

Conclusion

Interpersonal interaction, work and life in general are rapidly moving into the digital space, accompanied by the replacement of handwritten texts by printed ones. This trend is also observed in the criminal sphere, which is confirmed by the ever-increasing number of computer crimes committed. In this regard, forensics should develop new approaches to investigation, including the use of technological solutions from computer science. One of the possible directions of such borrowing is the study of keystroke dynamics, which will allow to reliably determine the executor of the printed text, as the study of classical handwriting helps to identify the executor of a manuscript. Intensification of work on this topic from the point of view of jurisprudence will increase the disclosure of crimes

[1] *Eremenko A. V., Sulavko A. E., Mishin D. V., Fedotov A. A.* Identifikatsionnyy potentsial klaviaturnogo pocherka s uchetom parametrov vibratsii i sily nazhatiya na klavishi [Identification potential of keyboard handwriting taking into account the parameters of vibration and force of pressing the keys] // Prikladnaya informatika [Applied Informatics]. 2017. V. 12. No. 1 (67). P. 88.

related to the distribution of texts with criminal content on the Internet, creation and maintenance of "death groups", corruption of minors, forgery of documents (e.g., accounting reports), etc.

To date, computer scientists have investigated the phenomenon of keystroke dynamics quite deeply: they have identified a significant number of features that can form the necessary for identification aggregate, resistant to a variety of, including deliberately created, confounding factors; experimentally proved the uniqueness of these features and the possibility of identifying the user of a computer device with a high degree of accuracy; developed a significant number of algorithms for the identification of the executor of the keystroke dynamics. Thus, criminal science now face the task, based on the existing developments, to adapt the technology of identification of a person by the features of keystroke dynamics for the purposes of detection and investigation of crimes, to justify the legal possibility of fixing the features of keystroke dynamics from the standpoint of observing the balance between the interests of justice and human rights and to propose an applied model, according to which the process of fixation, storage, research and use of the information will be realized. In order to effectively combat computer crimes in the creation and dissemination of various electronic texts, it is necessary to start solving these problems today.

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LEVERS FOR REALIZATION THE MECHANISM OF SUBJECTIVE CIVIL LAW

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Abstract. *The authors of this article consider subjective civil rights through the prism of elements of the content of civil-law relations. It is pointed out that the right is not intended to be the starting point for granting subjects their civil rights. Such rights, the researchers note, are acquired or established through the performance by the subject or other persons of certain actions. In the context of the study, the functional component of subjective right in relation to objective right is named. The objective right is presented as a vector of models of possible behavior — permissible, while the subjective right directly determines the model of permissible behavior, actually realized within the framework of a particular legal relationship. The study presents the concept of mechanisms and levers for the realization of subjective civil rights. Intermediate conclusions about the legal character and purpose of the subjective civil right as a phenomenon are drawn.*

Keywords: *subjective civil right, objective civil right, mechanism of realization of rights, realization of rights by the subject, leverages of realization.*

At the present time in legal science and practice there is an opinion that subjective civil right, acting as one of the elements of the content of civil-law relations, does not have a single definition. Formally, the subjective right is

understood as that sphere of external freedom, which is provided to the subject in accordance with the norms of law; the possibility of self-determination and realization of these rights.

The law as such is not intended to be the starting point for granting subjects their civil rights: such rights are a priori acquired or established through the execution of specific actions by the subject or other persons. In this context, the functional component of the subjective right in relation to the objective right is the behavioral capabilities of the subject. It is about the fact that the objective right determines the model of possible behavior — permissible, while the subjective right directly determines the model of permissible behavior that actually takes in the framework of a particular legal relationship.

It is logically reasonable to point out that this or that model of behavior is always based on a common result — obtaining a social good. As K. Kärger[1] notes, subjective right is the power to exercise the will directed to a certain object (footnote 5 of the article), which is communicated to a person by objective law (legal order)[2].

Objective civil right is a system of norms regulating property and personal non-property relations between legally equal subjects. It is appropriate to recall this concept to understand that subjective civil right is derived from it. That is, we can assert that subjective civil right brings objective action into action — objective. Being such a reference point, the subjective civil right is a type and measure of the possible behavior of a particular authorized person, which, of course, is defined in normative legal acts. In the opinion of Yu. S. Gambarov, who presented the approach mentioned by us in the scientific research, the fundamental position inherent in the science of civil law in the pre-revolutionary period is traced: "In the subjective sense, by right is meant everything that is given to us or, more precisely, provided by the action of this or that objective right"[3].

We believe that it is quite appropriate to make the intermediate conclusion that subjective right is a cradle of possibilities and variants of permissible behavior, provided by legislative norms.

However, the subjective right cannot be considered only from the point of view of "permissibility of behavior" of the subject: it is more about the requirement to

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[1] *Kärger K.* Zwangsrechte: Ein Beitrag zur Sustematisierung der Rechte [Coercive rights: A contribution to the suspension of rights]. Berlin, 1882. 549 p.

[2] *Vavilin E. V.* Osushchestvlenie i zashchita grazhdanskikh prav [The realization and protection of civil rights]. M.: Volters Kluver, 2009. 338 p.

[3] Kurs grazhdanskogo prava: Chast obshchaya. T. 1 [The course of civil law: Part general. V. 1] / Gambarov Yu. S. S.-Pb.: Tip. M.M. Stasyulevicha, 1911. 793 p.

behave in a certain way from other participants of the legal relationship; and about the legal background of such requirements (for example, to make reductions, changes, and additions to another author's work, because otherwise there is a violation of the author's right to inviolability of the work).

Within the framework of the topic of our research, we will consider the lever of realization as the legal character of the absolute and relative civil rights of subjects and the correlation of objective and subjective civil right.

Thus, the relevance of research aimed at studying the mechanism and levers of realization of subjective civil rights is due to the collisions of procedures of voluntary and forced implementation of subjective rights; there is no doubt the idea that the subjective civil right is related to the mechanism of civil law regulation, which is understood as the whole complex of legal means taken in unity, through which the legal impact on social relations is ensured[1].

Of course, without defining the subjective civil right in the framework of a particular legal relationship, it is impossible to regulate social relations in the sense that the behavior of the parties is ordered exclusively by the acquisition of subjective rights and the establishment of civil-law obligations. One way or another, the subject under study itself needs the definition of the mechanism — a complex of means that provides subjects with the achievement of social aims (goods), provided that their actions do not go beyond the legal field.

To date, in legal science and practice, the question is open regarding the implementation of subjective civil rights, as well as related problems associated with the provision of this process with a legal mechanism[2].

A number of scientists believe that the leverage of the implementation of subjective civil rights is nothing but a consistent, regular complex organization of legal means and provision of conditions aimed at achieving the ultimate goal inherent in the content of the right and obligation.

It should be noted that until today in science has not formed a well-established consensus in the view of the essence and legal nature of both the mechanism itself and its individual levers of implementation in the process of realization of subjective civil rights[3]. We believe that the way to overcome such open questions, which grow

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[1] *Andreev Yu. N.* Subektivnye grazhdanskie prava: ponyatie, vidy, osushchestvlenie i sudebnaya zashchita. 2-e izd. [The subjective civil rights: concept, types, realization and judicial protection. 2nd ed.]. Sankt-Peterburg: Yuridicheskiy tsentr Press, 2022. 408 p.

[2] *Belov V. A.* Grazhdanskoe pravo. Aktualnye problemy teorii i praktiki v 2 t. Tom 2 [Civil Law. Actual problems of theory and practice in 2 vols. Volume 2] / otvetstvennyy redaktor V. A. Belov. 2-e izd., ster. Moskva: Izdatelstvo Yurayt, 2024. 525 p.

[3] *Volkov A. V.* Zloupotreblenie grazhdanskimi pravami. Problemy teorii i praktiki: monografiya [The abuse of civil rights. Problems of theory and practice: monograph]. Moskva: Volters Kluver, 2009. 341 p.

into problems and the subject of discussions, is to focus on the mechanism and levers of realization of subjective civil rights as the main subject, rather than on its constituent and similar elements.

The authors of this study, under the mechanism and levers of realization of the subjective civil right, understand a complex system of internally arranged order of certain actions or complexes of such behavioral processes, resulting in a special phenomenon of rights and obligations within the framework of each specific civil legal relationship. At the same time, it is a legislatively determined order of organization of legal ways, means, and actions of participants in civil turnover that ensures the actual achievement by the subject of the legal goal (obtaining a good, including social).

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ON THE QUESTION OF THE CONCEPT OF ELECTORAL RIGHT

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Abstract. *In this article, the author reveals the character and content of the concepts: "electoral law", "electoral right of citizens", "objective electoral rights," and "subjective electoral right". The electoral law is a branch of law that regulates the rules and procedures of elections in a democratic society. This right guarantees every citizen the opportunity to participate in elections and influence the political life of the country. It determines the rights and duties of voters and candidates, as well as establishes the procedure for conducting elections, the system of electoral bodies, and norms on the inadmissibility of interference in elections. Electoral law also includes norms related to referendums and other forms of expressing the will of the people. It contributes to ensuring political stability, legitimacy of power, and the strengthening of democratic institutions.*

Keywords: *concept of electoral law, concept of citizens' electoral rights, concept of objective electoral right and subjective electoral right.*

Electoral rights are a kind of political rights and one of the main components of the more general political right of citizens to participate in the management of state affairs. In the opinion of V. S. Khizhnyak, the system of political rights and freedoms includes the right to citizenship, the right to power, the right to participate in the realization of supreme (legislative, judicial, prosecutorial, and supervisory) power, the right to make power decisions in referendums, the right to elect and be elected, the right to freedom of thought, speech, expression, the right to information, etc[1].

[1] *Khizhnyak V. S.* Konstitutsionnoe pravo cheloveka i grazhdanina na informatsiyu v Rossiyskoy Federatsii: dissertatsiya kandidata yuridicheskikh nauk [The Constitutional right of a human being and citizen to information in the Russian Federation: Dissertation of Candidate of Legal Sciences]: 12.00.02. Saratov, 1998. 222 p.

In the view of Bikmurzina N. S. and Syulaeva N. S., the electoral right is an important component of the political system of any state. It determines the procedures, rules and norms that regulate the peculiarities of elections and the realization of electoral rights of citizens[1].

According to Paragraph 28 of Article 2 of the Federal Law dated 12.06.2002 No. 67-ФЗ (ed. of 25.12.2023) "On basic guarantees of electoral rights and the right to participate in the referendum of citizens of the Russian Federation", citizens' electoral right is the constitutional right of citizens of the Russian Federation to elect and be elected to bodies of state power and bodies of local self-government, as well as the right to participate in the nomination of candidates, lists of candidates, in pre-election agitation, in the observation of elections, the work of election commissions, including the establishment of voting results and the determination of election results, and in other electoral actions in the order, established by the Constitution of the Russian Federation, this Federal Law, other Federal Laws, Constitutions (Charters), and laws of the constituent entities of the Russian Federation.

Electoral law is essentially a complex of legal norms regulating relations related to the right of citizens to elect and be elected to representative bodies of state power, local self-government and to elected executive posts, as well as regulating relations related to the procedure for exercising this right[2].

Most researchers consider electoral law in objective and subjective form according to the totality of legal norms. Objective electoral law and subjective are closely interrelated. Also, sometimes the electoral law in the objective sense is called the electoral law in the "broad" sense, and the electoral law in the subjective sense, respectively, in the "narrow" sense[3]. Let us further consider them separately.

Subjective electoral right. A lot of modern authors define subjective electoral rights as an opportunity to participate in elections. There are other forms of expressing the meaning of the concept of subjective electoral right. Thus, for example, A. V. Zinoviev and I. S. Polyashova believed that the subjective nature of electoral rights finds expression in belonging to an individual and acts as a type and measure of its possible

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[1] *Bikmurzina N. S., Syulaeva N. S.* Ponyatie izbiratelnogo prava i ego printsipov [The concept of electoral rights and its principles] // Teoreticheskie aspekty yurisprudentsii i voprosy pravoprimeneniya: Sbornik nauch. trudov po materialam Mezhdunarodnoy nauchno-prakticheskoy konferentsii [Theoretical aspects of jurisprudence and issues of law enforcement: Collection of scientific materials on the materials of the International Scientific and Practical Conference]. Izd-vo: Mordovskiy gosudarstvennyy pedagogicheskiy institut imeni M. E. Evsevyeva. Saransk, 2019. Pp. 23–27.

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[3] Izbiratelnoe pravo i izbiratelnyy protsess v Rossiyskoy Federatsii: uchebnik [The electoral law and electoral process in the Russian Federation: textbook] / S. A. Kuemzhieva, M. S. Savchenko, A. V. Krasnitskaya [i dr.]; pod obshch. red. M. S. Savchenko. Krasnodar: KubGAU, 2018. 199 p.

legal behavior[1]; V. V. Maklakov wrote that subjective electoral rights are the rights of a citizen to elect and be elected[2]; in the view of S. A. Glotov and M. P. Fomichenko, it is a state-guaranteed opportunity of citizens to participate in elections to public authorities and/or a complex of legal rights of citizens in elections, etc.[3]

Therefore, subjective electoral rights should be understood as the right of a particular citizen to elect and be elected to state and local self-government bodies.

Citizens acquire their specific subjective electoral rights upon reaching a certain age, as well as in the presence of certain other circumstances specified in normative legal acts. A citizen of the Russian Federation has the right to elect and be elected regardless of sex, race, nationality, language, origin, property and official status, place of residence, attitude toward religion, beliefs, membership in public associations, as well as other circumstances[4].

There is no unified point of view in the definition of objective electoral right in domestic jurisprudence. Most Russian scientists associate subjective electoral right with its main function — legal provision of realization of subjective electoral right of a particular citizen[5]. In the view of V. V. Maklakov, objective electoral law is a complex of legal norms regulating the electoral process[6]. Glotov S. A. and Fomichenko M. P. believe that it is a system of constitutional-legal norms regulating social relations related to the election of state and local self-government bodies[7].

The complexity of this issue is also manifested in the fact that some legal scholars consider electoral law as a legal institute, a sub-branch of constitutional law or an autonomous branch of law.

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