

**CONCEPTUAL STUDIES OF THE HISTORICAL AND
MODERN-DAY INFLUENCE OF CLIMATE ON FORMS
OF GOVERNMENT, POLITICAL AND SOCIO-ECONOMIC
PROCESSES: A VIEW FROM RUSSIA**

*ESTUDIOS CONCEPTUALES SOBRE LA INFLUENCIA HISTÓRICA Y
ACTUAL DEL CLIMA EN LAS FORMAS DE GOBIERNO, PROCESOS
POLÍTICOS Y SOCIOECONÓMICOS: UNA VISIÓN DESDE RUSIA*

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Abstract: This paper argues that climate has a significant impact, not only on the development of an economy, the state of the natural objects, morality and culture, but also on systems of government. On the basis of the concept of climate possibilism, the authors of this paper demonstrate patterns relating to the establishment of monocratic government in countries with hot climates and polycratic governments in countries with harsher, colder climates. Therefore, current climate change, i.e., the rise in the average annual temperature, will inevitably lead to the gradual expansion of territories with hot climates. As a result, the polycracy that is common in the modern world will eventually transform into monarchy, which, in turn, will lead to changes in the legal, moral, religious, cultural and other spheres of life. For this reason it is necessary to increase international cooperation in terms of implementing the provisions of the Paris Agreement (2015), and to adopt and implement a set of appropriate measures at the national level that will enable us to slow down the process of losing the cultural identity of countries with a polycratic (republican) form of government.

Keywords: Climate; determinism; possibilism; philosophy; law.

Resumen: Este artículo sostiene que el clima tiene un impacto significativo, no solo en el desarrollo de una economía, en el estado de los objetos naturales, la moral y la cultura, sino también en los sistemas de gobierno. Sobre la base del concepto de posibilismo climático, los autores de este artículo demuestran que existen patrones relacionados con el establecimiento de un gobierno monocrático en países con climas cálidos y gobiernos policráticos en países con climas más duros y fríos. Por tanto, el cambio climático actual, es decir, el aumento de la temperatura media anual, conducirá inevitablemente a la expansión paulatina de territorios con climas cálidos. Como resultado, la policracia que es común en el mundo moderno eventualmente se transformará en monocracia, lo que, a su vez, conducirá a cambios en las esferas legal, moral, religiosa, cultural de la vida. Por ello es necesario incrementar la cooperación internacional en términos de implementación de las disposiciones del Acuerdo de París (2015), y adoptar e implementar un conjunto de medidas adecuadas a nivel nacional que nos permitan frenar el proceso de pérdida de la identidad cultural de países con una forma de gobierno policrático (republicano).

Palabras clave: Clima; determinismo; posibilismo; filosofía; derecho

INTRODUCTION

The global climate change problem has multiple aspects to it and is studied by academics of different social, natural and other sciences. With regard to the law, this problem is usually viewed in terms of the development of international cooperation (implementation of the Paris Agreement provisions (2015) at the national level), a reduction in harmful CO₂ emissions, compensation for the harm caused by the adverse impact of climate change on nature, and people's lives and health, implementation of strategies for adaptation to, and mitigation of, climate change, defining climate-related human rights, implementation and protection of refugees' environment-related rights, etc. A couple of years ago, criminologist revealed that there is a direct connection between the crime rate and the nature of crime, on the one hand, and the change in the air temperature, on the other. Furthermore,

there have been a number of statistical studies that proved the fact that a rise in temperature is accompanied by a rise in the level of hostility, as well as the fact that the most brutal crimes are committed during heat waves¹.

The discussions that are actively held by the representatives of different national scientific law schools draw our attention to extremely important aspects of global climate change, however, they all automatically presume that the problem of global climate change and its unarguably adverse effect (depletion of the ozone layer, the increase in harmful ultraviolet radiation, sea levels rising, the flooding of island states, etc.) only emerged in the 20th century. However, not many of us realise that climate impacts not only the current environmental situation but also the long-term consequences for countries that are facing the risk of an increase in annual average temperature. Recent legal, historical and philosophical research shows that, in some areas, climate determines not only the crop yields or the state of bodies of water, but also the system of government, the mentality of the people, the level of legal culture and the content of legal regulations. The latter means that, historically, climate affected the predominance of a particular form of a country's government. At the same time, it is necessary to understand that, in human history, climate changed for various reasons, besides human activity. On the basis of all that is stated above we present the hypothesis of this research, namely the idea that the global climate changes that we witness today will eventually lead to changes in the political and legal systems of different countries where the climate will get hotter, and influence those countries' economic relations, legal systems (including forms government), morality, etc. That means that the development of appropriate measures to prevent global climate change still conducted at the international level after the Paris Agreement had been adopted, has a greater value than people tend to think, which is why all the efforts of modern states in this respect should be increased in order to avoid any changes in the political and legal order of any country in which democracy seems strong and under no threat at all. History shows us that changes can be slow to materialise and even unnoticeable at first, but inevitable nonetheless.

Thus, in the first part of this article we are going to examine the impact that climate had on forms of government in human history based on modern historical and philosophical studies (climate possibilism); in the second part we are going to examine how the concept of climate possibilism works in particular monocratic and polycratic states; in the third part of the article we will examine the impact of climate on the socio-economic and political-legal determinants of forms of government, as well as the mentality of the population.

1 BARON, R.A. & RICHARDSON D. R., *Human aggression* (Saint-Petersburg: St. Pete, 2001).

1. THE CLIMATE'S HISTORICAL IMPACT ON FORMS OF GOVERNMENT

From ancient times, people have studied the impact that climate has had on social processes. In the 5th century BC, Herodotus wrote that “Egyptians, aside from the Libyans, are the healthiest people in the world because of their unchanging climate”.² Hippocrates, in his turn, discovered the patterns of climate influencing the development of diseases known at that time³. In his work “Politics”, Aristotle wrote that the tribes in the European part of the county that lived in a colder climate were physically strong but not very intelligent and thus not very advanced in the trades. On the other hand, he believed that people in hot countries, for example, in Asian states, are very intelligent, but do not possess enough physical strength and live as slaves⁴. Later, in the 3rd and 4th centuries BC, Polybius devoted a whole chapter in his work titled “The Histories” to the way geographical location and climate influence people’s customs and traditions. He also noted that their harsh manner could be explained by their cold climate⁵. Later still, the influence of climate on social development was studied by Plato, Strabo and Arabian philosopher Ibn Khaldun.

Thanks to the works of Niccolò Machiavelli, Montesquieu, Jean Bodin and others, the Modern Age is marked by the new idea of environmental (climate) determinism. Environmental determinism is a concept in terms of which the social and economic development of nations, countries and societies in general is explained by the geographic factor, namely by geographic location, climate, landscape, water, soil, plant and mineral resources. Montesquieu is usually considered to be the father of this concept. At the same time, the foundations of this concept can be observed in the works of Jean Bodin, who revised human history, while taking into consideration the climate factor. Bodin divided history into three separate periods, the period of the soul, the period of the mind and the period of brute force. According to Bodin, the main role in the first period is played by the people of the south-east who worked on creating religion, developing sciences and learning wisdom. In the second period, the people of the Mediterranean establish states

2 HERODOTUS, *History*. 9 Volumes / translated by G.A. Stratanovsky (Moscow: «AST Publishers», «Ladimir», 2001).

3 JOUANNA J., *Hippocrates* / translated by M. B. DeBevoise (John Hopkins University Press, 2001).

4 ARISTOTLE, *Works*. In 4 Volumes. Vol. 4 / translated from ancient Greek; general ed. A.I. Dovaturova (Moscow: Myisl, 1983).

5 BUZESKUL, V. P., *Introduction to the history of Greece. Resources review and an article on the development of Greek history in the 19th century and in the early 20th century* / Introductory article and general ed. prof. E.D. Frolova (Saint-Petersburg: Publishing house «Kolo», 2005).

and something resembling legislative systems. During the third period, the people from the north discover new crafts, inventions as well as arts. He states that each period of history lasts for around 2000 years.

According to Jean Bodin, the key things that are influenced by climate are human physiology, systems of legislation and authority, and mentality. In his works, the French philosopher divides the planet into three climate zones: the hot equatorial zone, the cold polar zone, and middle mild zone. In terms of mental capabilities, Jean Bodin believed that people from the south are more intelligent than the people from the north, while the people from the north are physically stronger and sturdier than those who live in the south. This idea was justified by the fact that the defeat of the people living in the southern part of the continent did not last long and that the conquerors from the north were not able to sustain their status as the victors.

Therefore, the physical strength of the northern people combined with their limited mental capabilities shaped the mentality of this primitive and tough people. At the same time, it pushed them to systemise their daily life and made them more prudent. J. Bodin considered the southern people to be even more aggressive and hostile than the northern due to the brutality of their methods of fighting and violence towards their enemies. This kind of mentality demonstrated their autocratic tendencies. At the same time, the southern people had their own virtue that was based on the fact that they had an abundance of blessings and subconsciously tried to neutralise their vices⁶.

The French scientist also saw a correlation between climate and the state of the legislative system and governmental authority of a country⁷. For example, he noted that the rules of conduct adopted in the northern part of the continent were based on a sense of community and mutual respect, while the rules of the southern people (who had a more individualised mentality) were based on strict subordination⁸.

The concept of the environmental determinism was finalised in the work of Montesquieu titled "The Spirit of the Laws"⁹. The French philosopher claimed that climate predetermines the physiological diversity of people, their mentality, and their attitude towards slavery and affects the state and its legislative system. In the second chapter of the "Spirit of the Laws", Montesquieu explains how the

6 BODIN, J., *Method for the easy knowledge of history* (Moscow: Nauka Publisher, 2000).

7 GRININ, L., *Lecture: Nature factor in terms of the theory of history*, 2 Philosophy and society, 195-198 (2011).

8 BODIN, J., *Method for the easy knowledge of history* (Moscow: Nauka Publisher, 2000).

9 MONTESQUIEU, Ch., *The Spirit of the Laws* / Ed. A. Mateshuk; Transl. A. Mateshuk; Comment. A. Mateshuk (Moscow: Myisl, 1999).

climate affects people. He believed that low temperatures strengthen the muscles, while high temperatures relax them. The philosopher also underlined the fact that “the inhabitants of warm countries are, like old men, timorous; the people in cold countries are, like young men, brave”. This idea becomes the basis for his conclusion that the inhabitants of warm countries are more inclined to tyranny and slavery. According to Montesquieu, a tyrannical form of government can be explained not only by psycho-physiological peculiarities, but also by social specificity. As an example, he showed that the dependent status of women, which serves to maintain strict and centralised government at the lower level, also influenced the governmental system in general. In contrast, families in the northern countries develop principles of equality and mutual respect that were reflected in their legislative systems.

Further development of the ideas of environmental determinism can be found in the works of British scholars such as Henry Buckle, Francis Bacon, Halford Mackinder and Arnold J. Toynbee, French scientists such as Élisée Reclus, Antoine Barnave, Bernard Le Bovier de Fontenelle and Jean-Baptiste Dubos, German scholars such as Immanuel Kant, Johann Gottfried Herder, Alexander von Humboldt, Friedrich Ratzel and Carl Ritter, American researchers such as A. Guyau, Ellsworth Huntington, Ellen Churchill Semple and George Perkins Marsh, as well as Russian scientists such as Lev Gumilyov, Lev Mechnikov, Georgi Plekhanov and others.

In the British law school we see a new understanding of some aspects of environmental determinism. The most notable representative of this school, Henry Thomas Buckle, wrote that in spite of the fact that the influence of soil and climate is considered indirect, this influence results in some significant consequences¹⁰. Early in social development, an environment helps with the accumulation of goods and leads to the development of people, who later begin conquering nature as a result of their activity. The British scholar wrote that the people who are at the early stage of their development accumulate goods with the help of their environment (for instance, climate, soil, resources), while societies that are already at the next stage of their development accumulate goods with the help of their good environmental practices that are closely connected with the accumulation of knowledge. These processes have different limits, either based on the amount of natural resources, or based on the intellectual and business development of the society. The approach that he described marks the beginning of a new direction

10 BUCKLE, H., *History of Civilization in England* / Translated by K. Bestuzheva-Rumina and N. Tiblena. Vol. 1-2 (St-Petersburg, Moscow: M.O. Volf, 1873).

in terms of environmental determinism, namely climate (geographical) possibilism¹¹. The main distinction of this new school (in comparison with that of the French philosophers) is that the environment is seen as one of the determinants of the social process, starting with creating conditions for human development and finishing with rational activity aimed at the accumulation of wealth¹². Climate determinism was also studied by the representatives of the German school of thought. Carl Ritter wrote that the development of social mentality cannot be predetermined because it is just a result of adaptation to the environmental conditions by developing the traits that are essential for human life and activity. "Each person is a representative of the nature that brought him into this world as well as brought him up. People are the reflection of their homeland. The influence of the landscape on people's personality, build, shape of skull, temper, language and spiritual development is undeniable...The whole existence of humans is connected with their land by thousands of strong roots that cannot be plucked out"¹³. Friedrich Ratzel, one of the founders of the concept of Geopolitics, also considered climate to be the main incentive. After analysing the climate's impact on a person, Friedrich Ratzel came to the conclusion that the moist air of the tropics has a soporific effect that in general leads to social phenomena such as slavery. In contrast, dry air stimulates the nervous system that, in turn, stimulates the rule of the people and an active civil society. Such differences can be traced even in terms of a single state¹⁴.

In Russian legal literature, the concept of environmental (climate) determinism was studied by Lev Mechnikov and Vladimir Klimenko.

Lev Mechnikov believed that, in bad weather conditions, one should cooperate with other members of the society. This makes the structure of social relations more complicated due to the division of labour and further social differentiation. Under favourable conditions, one can get any goods necessary for life and activity without any additional help. Another key geographical factor for the Russian scientist is the aquatic environment, with the help of which we can divide human development into periods in terms of a river, sea and ocean spectrum¹⁵. The river

11 GRININ, L., *Lecture: Nature factor in terms of the theory of history*, 2 Philosophy and society, 195-198 (2011).

12 TRIFONOVA, T. A., LUBISHEVA, A. V. & REPKIN R. V., *Geography. Ecological and geographical and social and economic space: textbook* (Vladimir: Vladimir State University Press, 2013).

13 SAMAROVA, L. R., *Geographical determinism in modern religious studies*, 79 Culture of the people from the Black Sea region, 134-138 (2006).

14 RATZEL, F., *Anthropogeographie*. Vol. 1 (Stuttg., 1921); Ratzel F. *Politische Geographie* (Munch., 1923).

15 GRININ, L., *Lecture: Nature factor in terms of the theory of history*, 2 Philosophy and society, 195-198 (2011).

period is characterised by tyranny, the sea (Mediterranean) period is characterised by oligarchy, while the ocean period is characterised by the building of liberal democracy. At the same time, Lev Mechnikov paid special attention to climate conditions. He noted that, in a hot climate, in spite of its abundant wildlife, “there is still no strong civilisation that could fill a page in the chronicles of human history. The reason for that is the excessive development of organic life in all of its forms.

This abundance of life stymies people’s energy and intellectual development; the inhabitants of the warm climate do not have the key incentive to work, to explore the world around them and to cooperate since everything is given in abundance by nature”¹⁶. That is why “cooperative solidarity” predetermines more personal liberties in terms of rights, as well as in terms of actions that minimise the risk of sustaining tyranny and leads society to democratic and republican forms of government.

Vladimir Klimenko has also devoted many of his works to climate conditions in the course of human history. The author writes: “...It doesn’t seem to be a coincidence that all the periods of massive cultural shift were also periods of global cooling to a greater or lesser degree”¹⁷. Consociation of tribes and unification of people, establishment of new states and the rise in intelligence, as well as cultural and technological breakthroughs should all be connected with the historical periods of climate cooling. In their turn, the periods of climate warming lead to intellectual and spiritual regression. For example, the great period of Chinese philosophy and culture occurred after the year 330 BC, a period of climate cooling. According to Vladimir Klimenko, local climate changes (for instance, in one country or one part of the country) do not always match global climate changes; and notions such as climate “deterioration” (e.g., air cooling, a decrease in the amount of precipitation) or climate “amelioration” (e.g., warming, an increase in the amount of precipitation) are quite subjective¹⁸.

Thus, as time passes the initial understanding of geographical determinism changes into a more low-key rhetoric and eventually turns into the concept of geographical (climate) possibilism. Furthermore, studies such as Geopolitics, for instance, started emerging on the basis of this concept. If we take into consideration climate and geographical location when studying the processes of legislation and state establishment, we realise the necessity of taking a fresh look at the

16 MECHNIKOV, L. I., *Civilization and great historical rivers* (Moscow, 1995).

17 KLIMENKO, V. V., *Climate and the history of early High cultures (3500-500 BC.)*, 4 Vostok Publishers, 5-24 (1998).

18 KARPYUK, S. G., *Climate and Geography in terms of the human dimension (archaic and classical Greece)* (Moscow: Institute of World History (Russian Academy of Sciences), 2010).

established legal categories. A complete disregard for climate conditions as objective determinants can be considered a mistake. We should presume that while climate has a direct influence on people's lifestyle, habits, mentality, and the levels of economic development, as well as the way countries collaborate with each other, it also has an indirect influence on law and governance.

2. CLIMATE POSSIBILISM IN MONOCRATIC AND POLYCRATIC STATES

In our opinion, the connection between the climate and human development cannot be denied. The influence of climate on different spheres of social life, including the development of a state, is well demonstrated in the works of European, American and Russian academics. In terms of historical analysis of the climate's influence on the establishment of types of governance, it is possible to determine (besides a direct influence during the early periods of the states' development) its indirect influence through different stages of establishing social behaviour.

At the early stages, a nurturing or adverse environment shapes a particular kind of mentality in people living in a specific area by means of natural selection. It directly affected the processes of socialisation that later took place with the help of religion. We should underline that the religion itself is a result of the behavioural patterns that were also shaped by environmental conditions. If we look at the works of Montesquieu, Friedrich Ratzel and Lev Mechnikov, as they give examples of relations in families, gender roles in society, people's attitudes to strong beverages and other habits, it is difficult to deny the transformation of some moral standards into religious dogma. If we continue tracing the connection between climate and social development, we should underline that established methods of socialisation, as well as people's dispositions, become an integral part of their culture (mental matrix). In essence, culture also determines the development of the economy and the legal sphere. This last stage is the one that eventually pre-determines the method of governance. Of course, there can be some exceptions in terms of this chain but even in cases of exceptions, the environmental conditions have an impact on humans. In this case, we talk about the development of strong personalities and particular ideological and worldview theories that can suppress the established forms and principles of cooperation between society and the state with the help of these tools.

Before presenting the discovered patterns of climate influence on the type of state, it is necessary to mention the cognitive level at which it was studied. Modern science recognises at least two of these levels, geographical (climate) determinism and possibilism¹⁹.

The difference between these two levels is a casual connection between environmental conditions and the studied phenomenon. The second claims that there is a possible connection between two objects, but only in terms of adaptation, which eliminates direct dependence. Taking into consideration various historical examples and multiple aspects of the development of social life, it only makes sense to talk about climate possibilism²⁰.

The ideas that are stated above allow us to detect the patterns of the influence of a particular climate, in the broad sense, on the form of government. After the further development of these ideas, we can conclude that monarchy is usually established in countries with beneficial climate conditions, while polycracy is usually established in countries with less beneficial conditions. Considering climate as an incentive phenomenon that determines certain behaviours and human thinking characterises it as a particular area of motivation. One can clearly see this in the historical processes that were studied in the works of Vladimir Klimenko. He considers an adverse climate (low temperatures, an abnormal amount of precipitation or a lack thereof, a complex landscape) to be a catalyst for human development²¹.

According to his table of the sequence of climate events and the history of the first high cultures in the 6th–1st millennia BC; a comparison table of the periods of Rome (Byzantium) and Iran starting with the 1st century BC and until the middle of the 7th century AD²²; and a comparison table of the sequence of climate and historical events during the rise of world religions (the 5th century BC to the 7th century AD) we can clearly see a certain pattern. At the same time, in this article we are focusing only on the changes that concern statehood and law, i.e., the establishment, development and dissipation of states. The idea of presenting an adverse climate as an incentive for the development of public affairs also encom-

19 ZAMYATIN, D. N., *Geographical factor in the genesis and dynamic of civilization*. In: *Civilisations in a globalising world. Preliminary results of the interdisciplinary project: According to the materials presented at the scientific conference* / Ed. V.G. Horos. Series «The Library of the Institute of World Economy and International relations». (Moscow: Institute of World Economy and International Relations of the Russian Academy of Sciences, 2009).

20 FEKADU, K., *The paradox in environmental determinism and possibilism: a literature review*, 7 *Journal of Geography and Regional Planning*, 132-139 (2014).

21 KLIMENKO, V. V., *Climate and the history of early High cultures (3500-500 BC.)*, 4 *Vostok Publishers*, 5-24 (1998).

22 KLIMENKO, V. V., *Climate and the history from Confucius to Muhammad*, 1 *Vostok Publishers*, 5-31 (2000).

passes the processes of state establishment. Based on the data given by Vladimir Klimenko, we can see that the air temperature during the rise of Ancient Egypt was getting cooler²³. However, it is necessary to note that the location of the first states is characterised by an acceptably warm climate and close proximity to water bodies (in our example, it is the river Nile). This is also proved by the fact that, at that period of time, northern peoples did not even have a state. There is another fact worth mentioning: nowadays the climate in most parts of Italy is mild, but during the early periods of the Ancient Rome (753 BC) it was quite severe. According to the ancient books that reached the present age, the period from 850 BC to 480 BC was marked by a dramatic cooling.

For example, Lucius Junius Moderatus Columella, a Roman author, wrote, based on the well-known book written by the two Sasernae (father and son), that in the early 1st century BC grape and olive growing was difficult in the central part of Italy due to the long, severe winters that sometimes could even prevent “grape or olive shoots from growing”²⁴.

According to the Roman writer Lucius Livius Andronicus, the winters in the middle of the 1st century were so severe that the Tiber River would freeze²⁵. The described situation is related to the thesis that polycracy (in this example it is a republic state) develops only in adverse climates. For instance, similar climate conditions predetermined the establishment of democracy in Athens (as a clear sign of polycracy). According to the works of Herodotus and other historians that have reached our age, the development of democratic institutions in Ancient Greece took place in adverse climate conditions that manifested in the freezing of the Kerch Strait (Cimmerian Bosphorus) and the Bosphorus, as well as in the inability to grow grapes and olives²⁶. According to our thesis, the opposite process takes place when the climate starts getting warmer. In the works of different European scholars, we find that it is very common to witness the development of an individual, centralised system of governance, usually a monarchy, in these warmer periods.

For instance, if we take the Eastern climate as a warm climate then Hegel's statement seems quite representative: The East knew and still knows that only one is free (a monarch, a tsar, a shah or an emperor); “the German world knows that

23 KLIMENKO, V. V., *Climate and the history of early High cultures (3500-500 BC.)*, 4 Vostok Publishers, 5-24 (1998).

24 LAMB, H. H., *Climate, History and the Modern World* (L. and N.Y., 1995).

25 LAMB, H. H., *Climate, History and the Modern World* (L. and N.Y., 1995); *Climate of the Ancient Rome*. In: *Historicus. Social and political journal* / <http://historicus.ru/1650> (date of access: 11.12.2020).

26 VINOGRADOV, Y. A. & MARCHENKO, K. K., *Greeks and Scythians in the northwestern part of the Black Sea region in the 5th century BC*, 1 *Journal of Ancient History*, 80-85 (1995).

everyone is free”²⁷. However, one can argue that in the Middle Ages there were a number of countries in Europe that had a monarch as their head. Today we also have monarchic form of government in countries such as the UK and Japan.

An answer to this can be the following abstract from the book of an American jurist H.J. Berman “Law and Revolution”: “Royal jurists such as Bracton said that the kings have a duty to obey the law, that the king is “under God and the law,” that it is not the king that makes law but the law that makes the king... Eike of Repgau, Bracton, Beaumanoir and others claimed that the king himself was bound by law and that the king’s subjects might even have, in some circumstances, the right to disobey his command if it was unlawful. The belief was rooted, first, in the theological conviction that the universe was subject to law and, second, in the duality of secular and spiritual authorities, which placed both practical and theoretical limitations upon the power of each...third, in the pluralism of secular authorities within each kingdom and, fourth, the belief in the supremacy of law was closely linked to the mutuality of obligations between superiors and inferiors...”²⁸.

Thus, even though we see that the external conditions presume a monocratic form of government similar to the one in hot eastern countries, the internal processes are marked by progressive and applicable democratic principles, which are woven into all the elements of the supreme authority. At the same time, it is necessary to remember the provisions that are stated above and again underline that the form of government should be defined not only by formally established norms, but also by taking into consideration the actual conditions in which the government functions. We should also mention that the impact that climate has on the form of government can be traced not only in ancient times, but in the Modern Age as well. The French Revolution can be a good example of this. In 1787–1788 the country was in crisis due to the bad harvest, and the severe winter of 1788–1789 completed this process. More and more often, “hordes of ragged vagabonds go out on the streets and one can hear their angry cries of hunger”²⁹. Edicts are issued against speculative activity which drives people to despair. All of these lead to the irreversible consequences – Parisians begin the Revolution.

Thus, “the hunger and the extremely high prices of bread provoked such a strong hatred towards the king and his court that it could not have been provoked by the combined works of François-Marie Arouet Voltaire, Jean-Jacques Rousseau and Denis Diderot”³⁰.

27 HEGEL, G., *Works on politics* (Moscow, 1978).

28 BERMA, H. J., *Law and Revolution* (L., 1983).

29 CARLYLE, T., *The History of the French Revolution* / Trans. from English Yu.V. Dubrovina and E.A. Melnikova (Part I) (Moscow; Thought, 1991).

30 GRIGORIEV, R., *Should we fight fire with fire?* 6 Knowledge is power, 39-42 (2007).

Similarly, the Tsardom of Muscovy in the summer of 1601 was marked by a period of long cold showers, and July, in particular, was marked by the first snow. In late August, the Dnieper was completely frozen and people were sledging on its icy surface as if it was wintertime. There was no harvest that year. In May of 1602 the air temperature was again below zero, which led to the loss of harvest. The following famine left almost one-third of the population dead, which led to massive riots (the Time of Troubles) that stopped in 1613 with the first and only election of a Tsar. He was elected by a national assembly (Zemsky Sobor) that included a huge portion of people and was not the only candidate.

Thus, the idea of the climate possibilism that climate has an impact on the form of government is proved by both scientific studies and examples from world history. These examples give us an opportunity to define the patterns of the climate's influence on social development, namely the fact that a mildly warm climate allows the government to be centralised and separate from the people, which eventually leads to monarchy.

In its turn, an adverse (cold) climate motivates people to be self-organised, to take care of their businesses and determine their future based on personal freedom and cooperation, which leads to polycracy and the development of democratic institutions. We should also underline the connection between social and economic, as well as political and legal, determinants and climate conditions. As a result, we can get a glimpse of the actual effect that environmental conditions have on the type of government.

3. INFLUENCE OF CLIMATE ON SOCIO-ECONOMIC AND POLITICAL-LEGAL DETERMINANTS THAT DETERMINE THE FORM OF GOVERNMENT, AS WELL AS THE MENTALITY OF THE POPULATION

3.1. INFLUENCE OF CLIMATE ON ECONOMIC PROCESSES AND THE MENTALITY OF THE POPULATION

It is obvious that climate is important for the development of an economy. A well-known Arabic philosopher and historian, Ibn Khaldun, wrote that "...if the soil is fertile then there is only one ruler in the state, if the soil is barren than it leads to the rule of many"³¹. It is true that a cold climate was not initially an

31 IBN KHALDUN, *Prolegomena (Muqaddimah)* / Ed. Translated from Arabic and comment. A.V. Smirnova. In: *Historical and philosophical annual journal 2007* (Moscow: Nauka Publishers, 2008).

advantage for people since it resulted in a harsh environment and scarcity. However, as states started developing and the economy started becoming more and more global; the northern countries started developing exponentially. The necessity to adapt and tame nature with the help of various technologies predetermined the economic prosperity of these countries. As Douglass North writes, peoples have different attitudes to goods and resources. Thus, for example, the principle of complete accessibility to economic resources is implemented differently in cold (Western) countries and hot (Eastern) countries. In the first case, complete accessibility is there, but not free³².

While in the second case it is free, but it is not there for the general public. This phenomenon is closely studied by another American economist, Lawrence E. Harrison, who believes that society can take wealth either for granted or as a result of hard work and effort.

It is quite obvious that the second approach to wealth helps people respect private property, obey the principles of business practice and develop an innovative way of thinking. A good example of this can be found the works of E. Harrison, where he describes the economies in Latin America. "A mild climate is perfect for developing good habits (lack of excessiveness, thriftiness and forethought) that enhance economic development, but most of the countries in Latin America belong to the tropical climate"³³. The same ideas can be found in the works of French representatives of the concept of the geographical (climate) determinism.

People in good climates tend to be lazy and do not seem to be very creative or have an innovative way of thinking since there is always enough of everything to meet their needs and they do not need to work hard to have it. In fact, if we look at the world today, we will notice that economy in mild and cold climates is very developed. This idea is proved in the works of American economist Jeffrey Sachs³⁴. Climate can directly influence people's habits and lifestyle, which, in turn, will eventually shape their mentality. As we have already mentioned, there were many scientists who were working on distinguishing and defining behavioural patterns related to climate.

32 NORTH, D., WALLIS, J. J. and WEINGAST B., *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History* (Cambridge and New York: Cambridge University Press, 2009).

33 HARRISON, L. E., *Who prospers? How cultural values shape economic and political success* (New York: Basic Books, Cop. 1992).

34 SACHS, J., *Notes on a New Sociology of Economic Development*, In: Culture Matters. How values shape human progress / Ed. by Lawrence E. Harrison and Samuel Huntington (Moscow: Moscow school of political studies, 2002); Rangel C. *The Latin Americans - Their Love-Hate Relationship with the United States* (New York: Harcourt Brace Jovanovich, 1977).

These were social and culture scientists, legal experts, economists and political scientists. For example, Lawrence E. Harrison discovered that a reasonably mild climate together with a complex landscape and close proximity to the ocean had made Korean and Japanese people hardworking, prudent and hungry for knowledge³⁵. In fact, if we project these conclusions on the people who live in adverse climate conditions, we can discover that their efforts are primarily aimed at preserving and developing existent energy (resources, etc.). This kind of attitude to nature is only possible if people possess qualities such as prudence, accuracy and meticulousness. Another popular concept that is worth our attention is the one that explains the differentiation of Western and Eastern cultures on the basis of the development of brain hemispheres. This approach was supported by such scholars as Vadim Rotenberg and Viktor Arshavskiy. These authors distinguish Eastern and Western ways of thinking based on hemispheric asymmetry. Each hemisphere is characterised by its specific method of processing information³⁶. However, climate conditions also play their role in this system. Adverse climate conditions boost the development of the left hemisphere, while beneficial climate conditions boost the development of the right hemisphere. This is proved by the biological characteristics of each hemisphere³⁷.

3.2. THE IMPACT OF CLIMATE ON THE POLITICAL AND LEGAL DEVELOPMENT OF SOCIETY

Climate conditions have an impact on the development of the following aspects of the state and the law.

It is necessary to note that the level of legal awareness among people depends on their level of intelligence and worldview. The need to survive in harsh climate conditions facilitates the development of logical thinking in people of certain countries. New technologies are invented as an answer to the demand of rational consumption of resources such as raw materials, and solar, air and water energy. The same demand is an incentive for the further development of these technologies. In this case, the most representative examples are those of Germany, the USA and the UK, as confirmed by statistics. According to the data presented in the Human Development Report of the UN issued in 2004, the average adult

35 HARRISON, L. E., *Who prospers? How cultural values shape economic and political success* (New York: Basic Books, Cop. 1992).

36 KESSIDI, F., *Globalisation, functional asymmetry of the brain and the issue of cultural integration*, 1 *Philosophy and society*, 45-52 (2004).

37 ROTENBERG, V. S. and ARSHAVSKY V. V., *Right and Left Hemispheres Activation in the Representatives of Two Different Cultures*, 38-2 *Homeostasis*, 49-57 (1997).

literacy rate in Arabic countries was 77% for men and 57% for women. More than a half of women in Iraq, Egypt and Morocco were illiterate. Only 29% of women and 70% of men in Yemen turned out to be literate. An exceptionally low level of literacy among women is most noticeable in two areas when it comes to legal awareness: first, women obey men, which leads to gender inequality and the inability of women to participate in any governance processes; second, illiterate women channel their orthodox views onto their children, which results in a general decrease in literacy³⁸. But the perception of the world expressed through one's attitude to society is also influenced by climate. Thus, if we take into account the idea of Andrey Pelipenko regarding the struggle for survival and the formation of a "new naturality", we should underline that an adverse climate has a negative impact on the demographic rate. Of course, this cannot have a positive influence on the work of the northern people that is aimed at developing their state or finding new means and resources for survival. However, it does explain why the inhabitants of a cold climate have to think not only of themselves but of others as well. In the legal consciousness and legal systems of such states, this climate-determined phenomenon is reflected in the "principle of humanity" that is in fact a mentality based on love for others and the overcoming of anything unsustainable³⁹.

Thus, the impartial social relations, the necessity to protect human rights, as well as the support of equality and justice in the countries with an adverse climate justify the need for establishing and developing a legal system without any assistance. This is exactly the reason why all the members of the society live by the principle of the rule of law, since it is based upon a consensus. One of the key traits of democracy is the guarantee that this principle would be followed. And the fact that the law is shaped by the will of people lets us talk about a genuine democracy as an integral part of the republican form of government.

Political and legal doctrines are a reaction to existent critical situations, including the crises in the governmental sphere. Violations of human rights and *coups d'état* are phenomena that give rise to an almost instantaneous negative reaction from peoples in states with cold climates. The mentality of people living in warm climates, as well as their lack of practical skills mean they either do not react to

38 HARRISON, L. E., *Jews, Confucians, and Protestants: Cultural Capital and the End of Multiculturalism* / Translated from English by Y. Kuznetsova (Moscow: Myisl Publishers, 2014); United Nations International Children's Emergency Fund, «Afghanistan: Statistics». In: www.unicef.org/infobycountry/afghanistan_statistics.html (date of access: 11.12.2020).

39 PELIPENKO, A. A., *Sensogenetic concept of the civilisation history*. In: *Civilisations in a globalising world. Preliminary results of the interdisciplinary project: According to the materials presented at the scientific conference* / Ed. V.G. Horos. Series «The Library of the Institute of World Economy and International relations» (Moscow: Institute of World Economy and International Relations of the Russian Academy of Sciences, 2009).

events in the state or turn to philosophical, abstract or religious dogma to find inner peace. This difference is clearly shown the revolutionary spirit of countries. One of the reasons for establishing and developing political and legal doctrines is the people's ability to self-critique. Lawrence Harrison noted that "individual and group self-criticism, self-help and the desire to fight against corruption are considered to be necessary traits and valuable advantages"⁴⁰.

These traits become stronger as we move north. This phenomenon was closely studied in the works of C. Rangel and Jean-François Revel, who pointed out the inability of Latin Americans to be self-critical, which was the reason for their low level of culture and poor quality of life⁴¹. The development of different philosophies and doctrines was also studied in the works of Vladimir Klimenko. The Russian scientist traces the connection between the temperature cooling and the rise of new ideologies. Thus, we can conclude that the climate's influence on the social and economic, as well as political and legal determinants, that define the form of government (type of state) can be either direct or indirect. Today, the influence of climate conditions is becoming more and more indirect. However, the idea of monocratic states being established in beneficial climate conditions and polycratic states being established in adverse climate conditions was proved in the present analysis.

CONCLUSION

In terms of the present research, we have described the main categories with which one can define the patterns by which climate conditions affect the form of government. According to these categories, the forms of government were distinguished dualistically based on the historical period. For example, today we distinguish between monarchy and polycracy. The correlation between types of government and climate conditions together with the works of different political scientists, economists, philosophers, cultural scientists, and history itself led to the following conclusion: beneficial climate conditions result in monarchy, while adverse climate conditions result in polycracy. In terms of proving this conclusion it would be fair to note that there are some exceptions. However, even in the cases

40 HARRISON, L. E., *Jews, Confucians, and Protestants: Cultural Capital and the End of Multiculturalism* / Translated from English by Y. Kuznetsova (Moscow: Myisl Publishers, 2014).

41 Culture Matters. How values shape human progress / Ed. by Lawrence E. Harrison and Samuel Huntington (Moscow: Moscow school of political studies, 2002); Rangel C. *The Latin Americans - Their Love-Hate Relationship with the United States* (New York: Harcourt Brace Jovanovich, 1977).

of these exceptions the importance and the impact of climate conditions cannot be denied. Most of the elements of the political and legal, as well as social and economic determinants, are more or less influenced by the climate.

The present article shows that climate conditions have a direct effect on the established form of government, as well as an indirect effect through social and economic, as well as political and legal, determinants. All in all, it can determine the most suitable ways of governance based on the prevailing determinants. We should also underline that supporting concepts introduced herein does not eliminate the consideration of other theories. In different periods of time these determinants may have a different level of influence. In view of the above, we prefer the original concepts of climate possibilism that are based on the idea that human development is possibly and partially determined by climate.

This means that, today, the efforts of states aimed at preventing global climate change are important not only in terms of preserving the established forms of economic activity (agriculture) or natural features (forests, water places), but also in terms of preserving the European/American cultural identity, which could be lost as a result of the current changes in climate.

The increase in average temperature due to the global climate change will inevitably lead to the expansion of the territory with a hot climate and certain countries will gradually gravitate from polycracy to monocacy, which, in turn, will result in economic, political, legal, moral and other changes, reducing the number of adherents of Christianity in favour of Islam and in the establishment of new customs and traditions. This is yet another reason for international cooperation in implementing the terms of the 2015 Paris Agreement.

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