

The Main Line of the Development of Human Civilization and the Mission of Historical Geography

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Abstract

This paper discusses two main lines of the development of human civilization and the mission of historical geography. Clearly define civilization as the sum of material and spiritual wealth created by human groups in a specific time and space and point out the connotation of Chinese civilization. One main line is the interaction and coordination between man and nature, and the migration and development of human beings in adapting to the geographical environment, which affects the origin of civilization, production mode and political system. Another main thread is that human beings overcome biological and animal nature and form human nature and common spiritual standards, which involves the influence of religion and war on the development of human nature. Emphasizing historical geography is of great significance for understanding the two main lines and the future development of human civilization and can provide experience for dealing with problems such as global warming.

Keywords

Interaction between man and nature, Development of human nature, Historical geography, Civilization connotation

Introduction

Civilization refers to the sum of material wealth and spiritual wealth created by a large human group in a specific time and space. Chinese civilization is the sum of material wealth and spiritual wealth created by the Chinese nation in the world over the past 5,000 years.

Human beings are in an extremely complex and diverse environment on the surface of the earth, and the development of human civilization and human history is the result of the comprehensive action of several factors [1]. However, from the emergence of human beings to the near future, there are always two main lines: one is the interaction and coordination between human beings and nature, that is, human beings unconsciously or consciously adapt to the geographical environment. First, human beings constantly overcome their own biological and animal nature, form human nature, and

gradually establish human common spiritual standards and values.

Early humans, after emerging in Africa, lacked productive capabilities and relied on gathering and hunting for survival. Despite the rich diversity of wild plants and animals in nature, the resources available for primitive humans' survival were limited. When human demands exceeded the natural renewal rate within a specific spatial range, they were compelled to expand their foraging areas. Once they established a foothold in new regions, they seldom returned to their original habitats. Some individuals, driven by curiosity about the outside world, ventured into new areas, either settling temporarily or moving on before food depletion. This led to a long, drawn-out process of human migration out of Africa to the most habitable places on Earth, with only a few successfully

reaching new settlements due to the high risks and uncertainties involved [2]. Moreover, although human fossils dating back hundreds of thousands to 12 million years ago have been discovered outside East Africa, including in present-day China, there is currently no evidence of the survival of these ancient humans, suggesting they, too, may have perished in the process of trial and error [3].

Early human migration and adaptation

For a long time after the emergence of Africa, human beings did not have the production capacity, so they could only make a living by gathering and hunting later. Although the wild plants and animals in nature are rich and diverse, the types and quantities that can be collected by primitive people and used for survival are still limited. Especially in the same spatial range, when the demand of human beings exceeds their normal reproduction and renewal, these people will not survive, and they will instinctively expand the collection range. Once you survive in the new area, you will never move back to the original place. But there are always some people who are more curious about the outside world and new things, prompting them to move to new and different areas, or temporarily settle down, or move on before the food is exhausted. They may become extinct because they cannot collect enough food to survive, or they may have completed a new migration [4].

In this way, humankind walked out of Africa and finally went to most places on earth suitable for human survival. But this process is extremely long. There may be only a few people who can finally walk to a new settlement. Because people at that time did not understand the external environment at all, they often had no choice when they went out again. They just tried and made mistakes repeatedly, and countless migrants would end up extinct. Those lucky enough to move to places with superior natural conditions have obtained better breeding conditions and gradually entered civilization.

Outside East Africa, including today's China, human fossils from hundreds of thousands to twelve

million years ago have also been found. But so far, no evidence has been found that these ancient people survived, and they should also fail in trial and error and lead to extinction like those who have not left Africa [5].

If future scientific research proves that human beings originated from more than one place in Africa, including the birthplace of ancient humans in China, then the migration and diffusion processes of people who originated from those places are the same.

Based on this, it is speculated that in the Milky Way or other spaces of the universe, there should be completely Earth-like stars in theory. This process has happened countless times in the past and present and will also happen in the future.

The influence of geography on civilization origins

Places that gave birth to early civilizations, such as Mesopotamia Plain in the two river basins, around the Aegean Sea, coastal plains in Greece, islands in the Mediterranean, fertile crescent zones, Nile Delta, and the middle and lower reaches of the Yellow River, all have good natural conditions. For example, more than twenty varieties that may be domesticated as food crops by human beings on the earth, most of which grow in the Mediterranean climate zone, and people around the Mediterranean zone were first domesticated into high-quality crops such as wheat, peas, and olives. Producing enough food provides a stable material foundation for population gathering and class differentiation. Another example is that the middle and lower reaches of the Yellow River belong to the plain formed by loess plateau and loess alluvial. The soil is loose, and the original vegetation is easy to remove. Five or six thousand years ago, the climate was warm, and the precipitation was sufficient, forming a large area of farmland. It is no accident that the dawn of civilization developed into the core of Chinese civilization in this area [6-8].

Production modes and social development

People who move to areas with poor natural conditions for assorted reasons must choose

nomadic, hunting, breeding, gathering and other modes of production.

It is difficult to produce sufficient and stable food supply, the population is limited and scattered, class Differentiation appears late, and the level is simple, so it has been impossible to form a city or administrative center. When they are developed enough to change the mode of production or can adopt settled agriculture, the nearby areas suitable for agriculture have already been occupied by other people. In areas where people engaged in different industries are staggered, because of the stronger production and survival ability of the farming population, people with other production methods are often compressed into space with worse natural conditions or must move out or be merged into the farming population. For example, in the middle and lower reaches of the Yellow River in the pre-Qin period, there were many Rong and Di tribes engaged in animal husbandry. By the reunification of Qin Shi Huang in 221 BC, there were no animal husbandry tribes living in compact communities within the Great Wall [9].

Political systems and geographical influence

Under the condition of low total productivity and high management cost, the ruling class should maintain its power, status, and interests.

Autocratic methods are bound to be adopted. Early political entities, Emirates and countries adopted authoritarian political systems and successively turned into hereditary systems. However, due to different geographical environments, the degree of autocratic centralization is different, and the scope of unification is different. For example, Chinese civilization was formed in the middle and lower reaches of the Yellow River, based on the Loess Plateau and the Loess Alluvial Plain. It belongs to agricultural areas, with a large area, no obvious geographical obstacles in the middle, easy to govern and manage, and low administrative costs. As a result, the concept and theory of great unification came into being exceedingly early, which was first realized by Qin Shi Huang in 221 BC and established a centralized and autocratic political

system, which lasted until the end of the Qing Dynasty at the beginning of the 20th century. In the Greek Peninsula, because there are only narrow plains along the coast, others are mountains, canyons and mountains, the transportation is inconvenient, and the administrative cost of ruling and managing in different places is too high, thus forming independent city-States, and there has never been a centralized and autocratic regime like the Qin Dynasty in the whole peninsula. Even when the national strength is the strongest, it is only a loose alliance between the major cities. Between upper Egypt and lower Egypt, there is only unity, not Chinese centralization. None of the Persian Empire, the Alexandria Empire, the Roman Empire, the Byzantine Empire, and the Ottoman Empire produced the idea and theory of "great unification", and none of them established a truly centralized regime [10].

Migration and survival challenges

Nomadic tribes can barely produce enough food to survive. Once adverse climatic conditions occur, they often must choose to move. Because of the limited geographical information they have, most of the migration is blind, so some of them will end up with tribal extinction or annexation by other tribes. When migration encounters human resistance, they have no choice but to confront it by force, and as a result, they may get food, materials and wealth that cannot be obtained by production. This will undoubtedly induce their greed, ambition and animality, and turn to plunder and killing to obtain more favorable living conditions. When the arable land is insufficient, the climate is unfavorable, or natural or synthetic disasters occur, agricultural tribes must migrate in part or in whole. Their fate depends on whether they can get enough land and basic living conditions including human and natural resources [11].

And like ancient China, which has a vast territory and enough farmland and can produce enough food and materials to support itself. A populous country has ample room for man oeuvre in the face of unfavorable climatic conditions or abnormal

disasters, and through internal population migration and the allocation of resources can be solved, such as the population moving from the north to the south, from the plains into valleys and mountainous areas, from the Yellow River basin to the Yangtze River basin, and developing undeveloped areas. Therefore, from the Western Han Dynasty to the Ming Dynasty, although it often had sufficient military control capabilities, the court never set up a formal county (state) system in the Mongolian Plateau, the Qinghai-Tibet Plateau, and the Northeast. Expanding the territory or sticking to the border is more for the sake of national security or the result of counterattacking the invasion. Only military guardianship and symbolic administration are conducted on the newly acquired territory, and once the national strength declines or is beyond reach, it will be easily given up. Even disdaining to acquire unfamiliar territory, if the management cost is too high, or the pressure of local resistance is too great, it will eventually be abandoned [12].

Genetic and geographical factors

Some people attribute the differences and characteristics between distinct groups, different nationalities, different countries and different civilizations to bloodline, genes and even.

Think there are advantages and disadvantages. But genetic research has proved that human beings come from the same ancestor, the same gene, at most several ancestors and several genes. Today's different races and different genes are the result of long-term evolution after the descendants of the same ancestor spread all over the earth. The main reason for these changes is the different geographical environment, rather than the existing genetic differences.

In addition, the restriction of geographical environment on human activities and human civilization is not reflected in the way of human life, production, and survival. The specific content and degree of the decision, but the provisions of the upper and lower limits under specific conditions. In this range, human beings can have unlimited creativity and development space. For example, in

a space with the same material conditions, diverse ways of life, production and existence, different tools, technologies, sciences, different values, ideologies and political systems can have extremely different material achievements and impacts on the natural environment. As for some spiritual wealth, it depends entirely on the individual. If thinkers can survive, they can produce consciousness, ideas, and thoughts. The spiritual products of different thinkers under the same living conditions vary widely, and the spiritual products of a talented thinker can exceed the sum of countless mediocre people, even reaching unprecedented heights [13].

Material wealth and industrialization impact

Material wealth can be accumulated and inherited, although it will inevitably be destroyed by manufactured and nature, but the general trend is more Come increasingly rich and diverse. Tools, technology, and productivity are always increasingly advanced and efficient, and they have sudden change and leap because of the application of scientific research results, and the material wealth may even be multiplied by geometric orders. For any civilization, as far as material wealth is concerned, it is always better than the past and today is better than the past [14].

With the development of productive forces, especially after industrialization, some people are intoxicated with the great progress of science and technology and material wealth.

The rapid increase once produced the idea that man can conquer nature and put forward the call of "conquering nature", which caused the exhaustion of some resources and the extinction of some species, and caused irreparable pollution and damage to the environment in some areas. Colonialism, imperialism, and monopoly capital add fuel to the flames, aggravating environmental deterioration and triggering social crisis. On the one hand, technological progress and scientific development have reached an unprecedented height; On the other hand, the harmonious coexistence between human beings and nature has also been severely assessed.

Development of human nature

Another main thread of human history is the process that human beings constantly overcome their own biological and animal nature, have human nature, and constantly improve. When human ancestors were still in Africa and in the process of going out of Africa, most people were only biological, animal, and other. There is no obvious difference between animals. Their actions, vocalization, foraging, eating, sexual desire, avoiding heat, keeping out cold, clustering, helping each other, fighting, mating, reproduction, brooding, liking, rejection, illness, death, and migration are the same as those of living things. At the same time, some or a few of them have developed or strengthened their curiosity, sympathy, disgust, humiliation, comfort, beauty, glory, imitation, judgment, thinking, expression, appeal, and desire for expression due to extraordinary physiological development or evolution of brain function, or for reasons that we can't understand so far, and constantly overcome their own animality, wildness, and animality. But most people do not have their ability.

Force but also do not agree with their behavior and expressed feelings, regard them as heterogeneous, and even expel or kill them. However, some of them rely on their own physical strength and intelligence to become tribal leaders, and through violent coercion or persuasion and demonstration, they make tribal members accept his lifestyle, standards of right and wrong, and norms of behavior, thus enhancing the humanity of tribal members. This process is long, tortuous, and repeated, but in the end, some tribes have formed a common humanity and formed a larger tribal alliance or tribe, and then formed Emirates, political entities, and early countries [15].

Religion, language and human nature

In the face of unpredictable and powerful nature and antagonistic groups, early human beings all placed their hopes on gods and ancestors. First, a wide range of nature worship and pantheism have emerged, forming increasingly grand and rich sacrifices. Because they worship and pray for

anthropomorphic gods, they prepare sacrificial offerings and sacrificial objects-animals, plants, blood, organs, hearts, heads, slaves, captives, beautiful women, aliens, martyrs, and various precious items according to their own standards and ideals. The concept of China in Qin and Han Dynasties was “regarding death as life”, so the funerary objects of the emperor should include everything he needed before his death. With the change of human's own material needs, aesthetic standards, and values, it gradually changed into food, fruits, flowers and elaborate sacrificial objects. With music, dance and grand ceremonies, sacrificial objects were gradually replaced by figurines, objects, models, pictures, and symbolic objects.

For distinct reasons, including what we cannot understand so far, in a specific region (one way of saying it is in Armenia) Humans have produced languages, and with the migration of population, different language families and more different languages have been formed. With language, outstanding and prescient people have more effective means, whether they want to enforce it or educate it. Since ten thousand years, different characters have been produced on the earth. The use and dissemination of written language not only records and promotes human thoughts and spiritual life, but also accurately records and expresses people's lifestyle, behavior norms, likes and dislikes, standards of right and wrong, values, etc., and gradually forms rules, conventions, decrees, systems and laws through the authority of family and political power. Written records make the communication between people and God more convenient, make people's prayers more direct and specific, and thus differentiate historical records and full-time personnel.

Rulers, religion and human nature

Rulers and ruling classes, because of their rich material conditions and powerful administrative power, can effectively promote their recognition.

Human nature, although they may not really practice it themselves. On the one hand, they can be educated through various channels of family, school,

and society, and on the other hand, they will be strengthened and forced by rules and laws and even harsh laws. After the prevalence of religion, the rulers will also resort to religion. As long as the “humanity” they want to promote is affirmed by religious belief, included in the scope of belief, or interpreted as the expression of belief, the rulers can achieve the maximum benefit without any administrative cost, but the inhumanity, ignorance, barbarism, tyranny, slavery, autocracy and centralization that the rulers actually promote are also pushed to the extreme under the condition of the integration of politics and religion.

Although religion itself is the product of the idealization, perfection and mystification of the creator's own human nature, once a religious letter is formed, Believers will lose their original humanity but must fully accept the “humanity” given by God, God and the Lord to redeem their inherent sins. Religious leaders, clergy, in the name of false gods, or according to their own understanding of the Oracle, promote their “humanity.” Any religious belief is exclusive. Before the secular world order and international treaties are formed, there will inevitably be irreconcilable conflicts between religions, which will lead to a lasting and fierce religious war. The combination of politics and religion and the religious war once made the relevant religious belief areas in Europe experience the darkest era in human history. Therefore, in modern society, church and state must be separated. While ensuring religious belief, religion should not interfere in politics, education, science, academics, secular society, and public affairs.

War and human nature

Under the condition that the survival resources are limited, and the human survival ability cannot be improved in time, groups compete for survival resources. Struggle and war are inevitable. No matter whether the war is won or not, it may arouse people's inherent animality and animality, and make some individuals or groups take predatory aggression instead of production and even take

killing as fun. Once a man with a strong animal nature has mastered power or become the leader of a large group, he will wage war regardless of the consequences. In addition, the publicity of human nature also makes some individuals or groups defend their property with just war, safeguard their rights and interests, and stop the war with war. When they have enough strength, they will also use human nature to regulate war and influence or force their opponents to abide by these rules.

For example, in the Spring and Autumn Period of China, Song Xiang gong persisted in not attacking when the enemy was strong, and we were weak. Strike enemy troops who are crossing the river and are not well prepared, and middle - aged and elderly people with gray hair persist when they are defeated and wounded. Some norms of duel and war were formed in Greece and Rome, and international treaties regulating war behavior, battlefield rescue, treating prisoners of war well and protecting civilians gradually came into being in Europe after the Middle Ages.

The progress of productive forces, science and technology, the development of weapons and means of war, and the increase of population have made war maniacs who hold state power.

People have unlimited lethality, and the expansion of their animal nature will bring catastrophes to all humankind.

Human nature also embodies other human groups, nations, and countries, and waged and persisted in just wars for their own interests, dignity, independence, freedom, and democracy. In the Second World War, most countries and people formed an alliance, defeated the aggressors, wiped out fascism, established the United Nations, established the norms of international relations, and formulated relevant international laws. But up to now, some people's animal nature is still not restrained, which has expanded into aggression, plunder, anti-human behavior, and terrorist activities, and brought great disasters to all humankind because of the most advanced weapons and means of war.

Spiritual wealth and human nature

The dependence of human spiritual activities on material conditions is extremely low. A genius, an outstanding person, if he or she has not yet with brain death, you can think, maintain, and enhance human nature, and create spiritual wealth. Of course, all this must be recorded and disseminated to have social and practical significance. So far, brain science research has not found that spirit and thought can be inherited with genes, and the function of the human brain is always evolving and optimizing. Therefore, the spiritual realm and the height of human nature do not necessarily improve with time and material foundation. The spiritual realm created by a genius or outstanding figure, the height and purity of human nature achieved may never be copied and surpassed.

The origin of human nature

Human nature is not a product of nature, nor a product of a specific geographical environment. There are only a few people living in the same geographical environment. Individuals will produce humanity or publicize, enhance, and purify humanity. Human nature is not the result of natural evolution, otherwise, human beings have appeared for more than two million years now. Why are there no other creatures on the same surface of the earth that have evolved into human beings and have human nature? It has long been popular that labor creates the world, but it can only create the material world, but it cannot create the spiritual world. There is another saying labor makes human beings evolve. In fact, simple labor can at most promote the evolution of the human body, but it cannot produce human nature, let alone promote human nature. Some animals can also work and even make tools, but they have not produced humanity, let alone evolved into human beings.

Science, humanity and contradictions

It is precisely because the research results of brain science so far cannot give a reasonable and convincing explanation to the principle of human mental activity, Although most scientific research results are

conducive to the manifestation of human nature, others play the opposite role. Science, humanity, humanities, and human beings always exist, and contradictions, imbalances and conflicts will continue to arise. What the conclusion of scientific research thinks can or should be done, starting from a certain stage or a certain human nature, is often impossible or should not be done.

The role of material and spiritual wealth in civilization

Of course, the formation, development, prosperity and decline of any kind of human civilization cannot be separated from basic material wealth. But in this group, obtained the means of survival and got rid of the state of material scarcity, especially after entering a rich society, the fate of civilization depends on spiritual wealth and human nature. The future of humankind, the spiritual basis of the community of human destiny, is the “common values of all mankind: peace, development, fairness, justice, democracy and freedom” put forward in Constitution of the Communist Party of China-the sublimation and crystallization of all human nature.

The mission of historical geography

On the one hand, human beings and human civilization have emerged and developed on the surface of the earth, which is the stage of human history. On the other hand, the surface of the earth itself is the material basis and component of human beings and human civilization, so the history of human civilization should also include the situation and evolution of the surface of the earth in different periods, which is the research object and disciplinary mission of paleogeography and historical geography. Historical geography studies and reconstruct geographical phenomena in human historical periods, relying more on information and written records preserved at that time.

Analyzing or restoring this information can solve important qualitative or quantitative problems, such as accurately determining the age through carbon 14 dating, determining the location and internal layout of the ancient city through excavation and research of sites, and determining the cultural type through

the identification of artifacts and their residues, but without words, it is impossible to finally determine the specific name, time, process and content. For example, although archaeologists can determine that the Tosi site in Xiangfan, Shanxi Province is the “Yadu”, they can only announce it as “very likely the legendary Yadu” because there is no written evidence. Therefore, historical geography can play a greater and more decisive role than paleogeography and archaeological geography in a civilization or historical stage with written records.

Historical geography and the two main lines of civilization

As far as the first main thread of human civilization is concerned, the geographical environment of the same period is the material basis of human civilization and the creation of human beings.

The premise of qualitative wealth always plays a restrictive role and plays a decisive role to a considerable extent. Only by correctly restoring or reconstructing the geographical environment in a specific period, including natural and humanistic elements, can we understand, estimate, confirm and evaluate this material wealth and its significance to humankind and human society.

As far as another main thread of human civilization is concerned, although human nature itself does not depend on geographical environment, the concretization and practice of human nature are inseparable from material conditions and are also closely related to geographical environment. The implementation of any concept thought and belief requires a minimum material foundation. Although advanced material wealth cannot naturally form advanced human nature, “the common values of all mankind of peace, development, fairness, justice, democracy and freedom” can only be realized in the world under the condition of advanced material wealth.

Historical geography studies and reconstruct the natural and human geographical environment in the historical period, which is a necessary condition for understanding the two main lines of human civilization and a feasible way to clarify the

relationship and difference between them. If there is only the first main line, only the same civilization can be produced and developed in the same geographical environment, but this is not the case in history. The main reason is that human nature and the development of human nature in different human groups are not consistent with the geographical environment and may be vastly different or even vastly different. Therefore, on the one hand, through the study of historical geography, it is determined what impact a specific geographical environment may have on human civilization and what consequences it will leave behind; On the other hand, by examining the actual situation, we can know what impact it has had and what consequences it has left. The difference between them just reflects the interaction or contradiction between the two main lines-sometimes it is positive superposition, and sometimes it is negative cancellation. For example, when releasing floods, the normal choice is to “beggar your neighbor”-guide to low places, open places and places that do less harm to yourself-which is completely in line with the adjustment between man and the natural environment. However, if we proceed with different human nature, we will either “beggar ourselves” in order not to adversely affect our neighbors or use the flood to aggravate the harm to our neighbors or negotiate with our neighbors to determine the scope and degree of the “beggar” first. In the early days of human civilization Period, the role of the first main line, the research object of historical geography, is physical geography. With the progress and development of civilization, the role of the second main line is increasingly strengthened, which not only produces more human geographical elements, but also natural geographical elements are rarely unaffected by human activities and human nature.

The future of human civilization and historical geography

The future of human civilization is still intertwined with two main lines. Because of the ignorance of human nature, it is impossible to predict existing scientific knowledge and principles, but the

research results of historical geography can still provide useful experience. For example, in the face of the global warming trend, the dominant judgment of scientific and technological circles is caused by human factors, but this cannot explain the fundamental reason for the greater warming and cooling in the history of human civilization. In the history of China's 5,000-year civilization, the warming or cooling that has occurred more than once is greater than the record since the instrument was measured, and it is also higher than the prediction of the global warming. At that time, human factors were much smaller than now, even negligible. For climate change before the era of instrumental measurement, modern meteorology and related disciplines are still at a loss. Based on the rich literature records and relics of Chinese civilization, the research method of historical geography may find another way and make a breakthrough. Historical geography will undertake a new mission for the future of human civilization.

Conclusion

The development of human civilization is driven by the interaction between man and nature and the shaping of human nature. Historical geography can restore the past geographical environment and clarify the relationship and contradiction between the two main lines. The early geographical environment dominated, and later the influence of human nature became stronger. In the future, although human nature is unpredictable, historical geography can provide experience for coping with challenges with achievements, expand research with the help of new technologies, help cultivate awareness of the relationship between human beings and the environment in education, and shoulder the mission of promoting civilization research and guiding future development.

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Conflicts of Interest

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References

- [1] Hu, H. (2021) From Digital Archiving to Digital Humanities: Reflections on the Development of Digital History in Mainland China. *Digital Humanities Research*, 4, 38-43.
- [2] Li, J., Sun, W., Li, M., Meng, L. (2021) Coupling coordination degree of production, living and ecological spaces and their influencing factors in the Yellow River Basin. *Journal of cleaner production*, 298, 126803.
- [3] Hu, H. (2021) Reflections on the Development of Digital Humanities. *Digital Humanities Research*, 36(2), 222-228.
- [4] Bickler, S. H. (2021) Machine learning arrives in archaeology. *Advances in Archeological Practice*, 9(2), 186-192.
- [5] Chang, B., Wan, C., Li, B., Chen, X., Feng, M., Wang, D. (2021) The construction and application for digital humanities knowledge base of ancient books based on word and entity annotation: A case study on Zhou Qin Han annals of Zhizhi Tongji an. *Library and Information Service*, 65(22), 134-142.
- [6] Can, Y. S., Gerrits, P. J., Kaba Dayi, M. E. (2021) Automatic detection of road types from the third military mapping survey of Austria-Hungary historical map series with deep convolutional neural networks. *IEEE Access*, 123456-123467.
- [7] Chen, K., Zou, Z., Shi, Z. (2021) Building extraction from remote sensing images with sparse taken transformers. *Remote Sensing*, 13(21), 4321.
- [8] Smits, T., Wevers, M. (2023) A multimodal turn in digital humanities: Using contrastive machine learning models to explore, enrich, and analyze digital visual historical collections. *Digital Scholarship in the Humanities*, 38(3), 1267-1280.
- [9] Wu, S., et al. (2023) Domain adaptation in

- segmenting historical maps: A weakly supervised approach through spatial co-occurrence. *ISPRS Journal of Photogrammetry and Remote Sensing*, 197(March), 199-211.
- [10] Luo, X., Wu, Y., Wang, F. (2022) Target detection method of UAV aerial imagery based on improved YOLOv5. *Remote Sensing*, 14(19), 4920.
- [11] Folke, C., Polasky, S., Rock Strom, J., Galaz, V., Westley, F., Lamont, M., Walker, B. H. (2021) Our future in the Anthropocene biosphere. *Ambio*, 50, 834-869.
- [12] Decasia, A. R., Guma, E., Liu, S., Renehan, A. (2022) Sex differences in the human brain: a roadmap for more careful analysis and interpretation of a biological reality. *Biology of Sex Differences*, 13(1), 43.
- [13] Go, J. (2023) Thinking against empire: Anticolonial thought as social theory. *The British Journal of Sociology*, 74(3), 279-293.
- [14] Luina, F., Barrientos, M., Gizzi, F. T., Glaser, R., Gruetzner, C., Palmieri, W., Tortoni, L. (2023) Historical data for natural hazard risk mitigation and land use planning. *Land*, 12(9), 1777.
- [15] Thomas, J. (2024) The politics of vision and the archaeologies of landscape. *In Landscape*, 19-48.