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Anatoliy A. Porokhovskiy

Lomonosov Moscow State University (Moscow, Russia)

HUMAN AND ROBOT: TECHNOLOGIZATION VS. HUMANIZATION OF NOONOMY¹

Abstract: the role of a man at various stages of the formation and development of capitalism is considered. It is shown how hired labor gradually turned from a factor of production into human capital and became a decisive element in the creation of new digital technologies. At the same time, there has been a significant change in the role and place of man in the economy and society. Noonomy can no longer rely solely on the private interest of capital, because technological fetishism has begun to threaten the very existence of a man. Artificial intelligence as a robot and in other forms claims to replace a man in many areas. Only a man himself is capable of transforming technologization into a modern support of humanization under the conditions of noonomy.

Keywords: man, robot, artificial intelligence, capital, noonomy, capitalist boundaries of technologization, prospects for humanizing life.

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波罗霍夫斯基 A. A.

莫斯科大学, 俄罗斯莫斯科

人与机器人:智力经济的技术化VS人性化

摘要: 本文研究了人在资本主义形成和发展的不同阶段的作用。说明了雇佣劳动如何从生产要素逐渐转变为人力资本并成为创造新数字技术的决定性因素。人在经济和社会中的作用和地位已经发生了重大变化。智力经济不能再仅仅依靠资本的个人利益,因为技术崇拜威胁着人类本身的生存。机器人和其他形式的人工智能,在许多领域趋向于取代人类。只有人类自己并在智力经济条件下才能够使技术化成为人性化的基石。

关键词: 人类、机器人、人工智能、资本、智力经济、技术化的资本主义边界、生活人性化前景。

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Introduction

Recently, numerous public forums, including the Joint International Congress SPEK-PNO-2020, have focused on discussing the most important issue of the XXI century – the role and place of people in modern society and economy under the strong influence of digital technologies. The spread of property, socialization of society and solidarity are taking place in a market capitalist civilization in all countries. They are evident in Russia as well. However, the market mechanism cannot withstand the burden of modern challenges and transformations. Nobel Prize-winning economist Professor J. Stiglitz states, “To do so, we must first recognize that the competitive equilibrium model (in which producers maximize profits, consumers maximize utility, and prices are set in a competitive market where supply and demand are in equilibrium) that has underpinned economic science for nearly a century is no longer capable of accurately capturing the state of today’s economy-particularly when it comes to understanding why inequality or even innovation-based growth is on the rise. A major overhaul of economic rules is needed” [Stiglitz, 2020, p. 18].

Research Methodology

One of the ways to solve the above problems is the concept of Noonomy proposed by Professor S.D. Bodrunov [Bodrunov, 2020a, 2020b], in the development of which more and more domestic researchers are involved. As an example of fruitful interdisciplinary analysis, this concept is an integrated approach to solving urgent theoretical and practical problems of modern development of various countries and the world economy. One such problem – the role of artificial intelligence – is considered by us in a special study of political economy [Porokhovskiy, 2020]. Since the questions of Noonomy cover a wide range of problems, we want to select among them the relationship between man as natural intelligence and robot – artificial intelligence. The starting point of our analysis is, of course, the human being.

In the system of capitalist market economy, one cannot but notice that **capital** remains the driving and determining force of development, adjusting all factors of current and long-term development to its interests. Thus, ***without an analysis of capital, its essence, its functional forms and modes, wrapped in a shell of ubiquitous digitalization***, it is impossible to show the role of man in the modern world and in a future society that preserves the principles and essence of humanism.

Based on these assumptions and given the preliminary nature of the analysis, let us consider the following problematic questions:

- man is a creator, but a factor of production;
- man is a resource as human capital;
- man is an appendage of a robot, an artificial intelligence;
- Noonomy – harmonization of technologization and humanization??

Main results and discussion

Man is a creator, but a factor of production. From a general historical point of view, human civilization is a man-made phenomenon that dynamically develops through the creative activities of people. During the first industrial revolution, there was a division of roles in society between capital and wage labor. The fact that wage labor emerged and spread contributed not only to the growth of labor productivity, but also to changes in the structure of the economy

and society, the formation of large groups of people by type of employment, the size of their property and social status. However, economic theory has interpreted these processes in different ways.

Developing the doctrine of classical political economy of the manufactory period, A. Smith, on the theory of value of labor, K. Marx [Marx] showed that even in machine production the law of value is still valid and that hired workers not only create new goods, but also bring profit to entrepreneurs and increase their capital. This made it clear that the movement of capital was based exclusively on wage labor, and clarified the different roles of workers and capitalists both in factories and in society. At that time, workers were primarily engaged in physical labor. Neoclassical economic theory, commonly referred to as *economics*, concluded that machine production equated all components of entrepreneurial activity – labor, capital, land – and therefore they could be given any symbols, including mathematical symbols, for calculations, modeling, and other investigations. In this way, wage labor became a factor of production without social specificity. The theoretical interpretation of hired labor as a factor of production formalized its role as *a factor of capital production*. In a capitalist economy, not only the factors of production but also their results take the form of capital.

This means that in a capitalist market economy it is meaningless to consider the role of the individual, the role of wage labor, in isolation from the movement of capital. Moreover, the subordination of labor to capital took place gradually. Under the conditions of predominantly manual physical labor in the manufactory period of capitalism, the worker could substitute for the entrepreneur, since his labor was not dependent on the machine, but was determined mainly by his acquired skills. In this case, labor was formally subordinate to capital.

It is another thing to work in a factory as a system of machines. Now the worker has become a real *appendage of the machine*, which belongs to the entrepreneur. There came a time when the development of technology and technique *actually subordinated wage labor to capital*. Since then, this subordination has not weakened, but shows up in various modified forms depending on the industry and the company.

At the same time, it must be remembered that both wage labor and capital, the types of employment and the forms of entrepreneurship are evolving. New features of this interrelationship emerge, often due to the flexibility of capital and its desire not to let any new phenomenon out of its grip. Gradually, capital begins to take an interest in everything, both economic processes and social structures.

Man is a resource as human capital. Everything subordinated to capital must achieve maximum effect – that is its essence. With the development of the market economy, the responsibility of the individual worker within the corporate structure also grew. The production of goods and services per employee increases every year. The situation of wage labor has not changed economically, but the cost to capital of creating each job has increased, as have the skill requirements and responsibilities of workers. While in the middle of the nineteenth century capital was still content with the position of the worker as an appendage of the machine, in the first decades of the twentieth century it was already impossible to increase labor productivity in the earlier way. A breakthrough was needed in the motivation of all factors of production, and especially of workers, in increasing the return on their labor.

There was a development of intra-firm relations; forms of production organization based on human relations were introduced in the brigades. Personal responsibility for the overall perfor-

mance of the enterprise emerged. The wage earner began to be perceived as a resource. Meanwhile, economic science understands capital itself as a resource, which theoretically and practically corresponds to the activities of enterprises in the last centuries. As a result, the wage earner became known as *human capital*. At the same time, the term *human capital* began to be used not only for people who are employed as workers, but also more generally when it comes to training people in the field of education for the upcoming activities in any field. Individuals have been put under the obligation to invest in their own education and specialized training in order to build up their human capital, on the extent and quality of which both their possible future employment and their intended business activities depend.

In today's industrialized countries, which the IMF has classified in recent years as 34 states and territories of the world [International Monetary Fund, 2020], wage labor remains the main form of employment for the majority of the population. Every wage earner has a real sense of the relationship between labor and capital and the economic dependence of wage earners on capital. However, the term *human capital* seems to equate the economic position of the ordinary worker and the entrepreneur, since both represent *capital*. While the worker owns his labor power, the entrepreneur owns real capital; he is a personified capital property.

With the development of the industrial revolutions, the role of creativity in the work of hired labor increased and the scope of hired labor went beyond material production (the production of goods); capital began to benefit from treating all kinds of resources (human, natural, scientific, social) as a form of capital. On the one hand, this confirms the objective increase of the importance of man in modern life, despite the rapid advance of information technology; on the other hand, capital consolidates its leading role in determining the content, forms and directions of progress. As a result, our civilization in all countries (developed and developing) appears as a peculiar accumulation of capital: **industrial, financial, service, social, human, cultural, spatial and natural**. It cannot be excluded that the list of **capitals** is incomplete.

In this group, financial capital occupies a dominant position, which allows it to bring the financial sector into a relatively independent orbit in both the national and global economies. Service capital occupies a significant place, because in recent decades the service sector has reached an incredible size – up to 75% of the gross national product of most countries. Industrial capital, however, continues to grow in absolute terms, even if its relative share is declining. Thanks to new technologies and rising productivity, the share of employees in material production tends to decrease, although the production of goods remains the backbone of the economy and society. The position of the wage earner depends little on the sphere of employment: everywhere he is directly or indirectly subordinated to capital.

Man is an appendage of a robot, an artificial intelligence. Given the fundamental role of industry in the economy and society, many researchers refer to the current phase of social development as the fourth industrial revolution. In terms of the state of technology, several authors propose to view social progress as a change of technological modes and attribute the sixth mode to modernity. In both approaches, the level and quantity of technologies are crucial. Both approaches are united by the fact that social development is considered within the framework of the capitalist market model, in which, as is well known, capital is the driving force. In terms of technology, digital technology has taken over everywhere. Digital capitalism is here, bringing together the digital economy and digital society. If in the era of

industrial capitalism the hired worker was a kind of appendage of the machine, on which the productivity of labor, its conditions and the length of the working day largely depended, in digital capitalism not only the hired worker but the majority of the population is transformed into an appendage of the robot – another kind of artificial intelligence. And this is where capital shows its power, because artificial intelligence also becomes capital. Thus, artificial intelligence translates all the contradictions inherent in the movement of capital. And above all, it becomes a competitor of human intelligence in the sphere of wage labor. This circumstance is felt particularly acutely by people, because despite the expansion of gignomics (the sphere of the self-employed), wage labor remains the main source of income for the majority of the working-age population.

Concerns about people's place in the digital society have become a major issue on the agenda of international forums. Experts from the Organization for Economic Cooperation and Development (OECD) prepared a roadmap for the next annual meeting of G-20 countries, held in Saudi Arabia in the fall of 2020, to assess the digital economy and its near-term prospects. The third chapter of this document addresses employment issues, focusing not only on the structure of jobs, but also on the growth of information and communications technology-intensive labor, as well as the responsibility of countries to provide timely training and retraining for new jobs, including those related to artificial intelligence and robotics in industry and services. According to the authors of the report, digitalization creates many problems that can only be solved together by creating international platforms for it.

According to researchers from the University of Chicago, the loss and long search for work leads to a devaluation of human capital. Analyzing universities in different countries, they concluded that interruption of work or education, for example, in schools and universities in Greece, leads to a decrease of 4.3% in the qualifications of teachers. The earnings of graduates – by 6.8% in the period considered [Dinerstein, Megalokonomou R, Yannelis, 2020, p. 35].

Digitalization “in full swing” also poses new challenges to the organization of business management at various levels. A special handbook for managers published by MIT Sloan Management Review, a journal published by Massachusetts Institute of Technology, points out that traditions and habits of employees, their cultural level, sometimes become an obstacle to the implementation of modern, digitally based management methods and principles. Basically, it is about creating a new culture not only of staff but also of management [Bean, 2020]. In this system, individuals, whether workers, employees, or managers, must learn the new rules of work dictated by digitalization. There are also paradoxical situations in different sectors of the economy where less educated and trained workers are needed to perform routine tasks that usually involve physical labor, such as delivering goods purchased online or transporting goods within and between companies. The field of physical labor responds differently to robotization and artificial intelligence (Blau, Coebe, and Meyerhofer, 2020).

As you know, the concept of artificial intelligence is quite extensive and broad [A Roadmap toward, 2020]. Not only is it associated with a variety of robots, but each robot contains some level of artificial intelligence aimed at performing the functions of a particular robot. For example, depending on the type of production, a robotic system may be used for intermediate or final assembly of the final product. The machine system of the modern factory is gradually being replaced by a system of robots controlled by other artificial intelligences. It can be seen that, on the one hand, artificial intelligence takes the economic form of capital and, on the other hand, its

appendage becomes the worker as human capital. Under the influence of digitalization, the relationship between capital and labor has become a relationship between artificial intelligence and natural intelligence, which is also transformed into capital.

It follows that any change in a worker's position in the workplace (in production or services) cannot be purely formal, since it affects the interests of capital, which determines the conditions of employment. Therefore, from both a production and a social point of view, artificial intelligence functions as both a production factor and a life factor. However, it is not capable of replacing the human mind in its entirety. This circumstance defines its limits and possibilities, which is also true for robots. However, the spread of robots also has economic limits. Capital will only introduce robots if they are profitable in the long run. At the same time, every state is interested in the employment of its citizens. It will encourage companies to increase the number of jobs as the economy and society become more digitized [A Roadmap toward, 2020]. IMF experts are reminding leaders of all countries of this as early as 2021 [The Jobs of Tomorrow, 2021].

Although robots and robotization are aggressively penetrating all aspects of modern life, they cannot replace the human mind, which indeed cannot be modeled and programmed due to the unrepeatability and uniqueness of the human brain. Rather, artificial intelligence complements and develops human intelligence, with humans playing an active role in this interaction.

Noonomy – Harmonization of Technologization and Humanization? The concept of Noonomy as a future human civilization is full of new arguments. The epoch of Noonomy represented as the coexistence of “society and the tehnosphere” [Bodrunov, 2020, p. 204], still has a long historical way to go. As S.D. Bodrunov noted, “Society must compete with the necessary material and technological conditions. We are talking about laying the foundations for a new, second-generation industrial society. It is good for people to understand how and where civilization is developing and what steps need to be taken to overcome existing and emerging obstacles in its path. And in this sense, technologization in the form of digitalization and artificial intelligence is increasingly freeing people from grueling work, saturating them with knowledge and skills, changing the environment and sphere of communication, and providing new opportunities for effective use of increasing free time. Undoubtedly, the focus on Noonomy instills optimism and faith in people as creators of their own future and the future of planet Earth.

Today, in the first decades of the twenty-first century, trends are already emerging that may lead humanity toward Noonomy. The theory and practice of free-market capitalist development are being rethought, pressing problems of environmental protection are being uncovered, the search for alternative sources of energy and renewable natural resources continues, and ways to overcome poverty and inequality in individual countries and on a global scale are being explored. But all of this is happening under the total domination of capital, which has subjugated labor, society and technology. So right now the world is moving on the rails of the market in a direction that benefits capital.

In this context, it is interesting to note the last interview of the Nobel Prize winner in economics and founder of the new institutional theory, Professor R. Coase, which he gave in early May 2013 to the editor of the journal “Man and Economy”, N. Wang. P. Coase believes that economic science is far from reality, is a “science of the blackboard”, which is an economy with zero trans-

action costs or the so-called zero sum [Wang, 2014, p. 101]. He opposed monopolism in science, especially in economic theory, believing that “we need a marketplace of ideas” because economics has been dominated by British material in the past and American material now. This means that an economic theory based on Chinese material is possible and a Chinese school of economics should emerge [Wang, 2014, pp. 102, 104]. The Chinese economic model works according to its own rules, and it does not care who thinks about it or what they write about it. Every country develops differently, property rights in China have their own protection. As R. Coase helped create the magazine, which is published in both English and Chinese, he concluded his interview by saying, “Our new magazine will help open the market to new economic ideas. I have a premonition of a volcano” [Wang, 2014, p. 119]. Among these ideas, the concept of Noonomy occupies a worthy place.

For both the concept of Noonomy and contemporary economic dynamics, the interrelation and interaction between the processes of technologization and humanization of life become a fundamental problem in the context of theoretical and practical solutions. The fact is that technologization manifests itself in many ways. First, it becomes capital – a new resource in capitalism. Second, technologization serves the progress of people themselves. Third, it intensifies competition among companies, nations and countries. Fourth, technologization creates new opportunities for the preservation of life and the environment on earth. And finally, fifth, technologization strengthens the pillar of humanization, for only when man masters all new technologies can he subordinate them to creation. Man’s victory does not come by itself, but by taking into account the real society and the real economic system in his activities. The economic system gives direction and constraints to the socialization of all modern processes.

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Information about the author

Anatoliy A. Porokhovskiy

Dr. Sc. (Econ.), Professor, Head of the Political Economy Department, Faculty of Economics of Lomonosov Moscow State University (1 Leninskie gory, Moscow, 119991, Russia); Principal Research Fellow, Institute for US and Canadian Studies of the Russian Academy of Sciences

E-mail: anapor@mail.ru