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**Andrey I. Kolganov**

Lomonosov Moscow State University (Moscow, Russia)

## THE EVOLUTION OF THE CONTENT OF HUMAN ACTIVITY AND THE CHANGE IN THE STRUCTURE OF THE ECONOMY<sup>1</sup>

**Abstract:** The article raises the question of how the mutual influence of shifts in the structure of the economy and changes in the content of human activity in production occurs. This problem is only partially addressed in the available sociological, economic and philosophical studies. The content of labor and the structure of the economy are most often considered in isolation, and their mutual influence is studied only from the point of view of investments in “human capital” necessary for the functioning and development of modern technologies in production. However, the technological shifts taking place in recent decades have led to a significant expansion of the range of human activities, which necessarily have creative functions. This dependence was distorted in the concept of the “creative class”, since it included employed people involved in activities that have an ambiguous and sometimes opposite impact on the evolution of the structure of the economy. A significant part of the creative potential is used to extract profit by producing simulated goods, manipulating the market and consumer preferences. Particular attention is paid to the situation in Russia, where the presence of significant human potential is accompanied by its gradual degradation, and shifts in the economic structure determine the low level of demand for this potential. This situation is in contrast with the period of the 20s – 30s. The twentieth century, when the USSR implemented a strategy of technological modernization, based, among other things, on the program of training qualified personnel and the development of scientific research. The transition to the widespread use of creative functions in labor activity will require both a progressive change in the technological structure of the economy and a change in the criteria of production activity by moving away from economic rationality in favor of the criteria of reason and culture. Such a transition will require a corresponding change in public relations in favor of relations of cooperation and solidarity and deep shifts in the institutional structure.

**Keywords:** labor content, creative activity, technology, human potential, economic structure, noonomy.

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科尔加诺夫 A.I.

莫斯科大学, 莫斯科

## 人类活动内容的演变和经济结构的变化

**摘要:** 文章论述了经济结构变动与人类生产活动内容变化之间相互影响的问题。在现有的社会学、经济学和哲学研究中, 对这个问题只是进行了部分探讨。劳动内容和经济结构二者往往被孤立地研究, 只是从现代生产技术的运用和发展所必需的“人力资本”投资的角度研究它们的相互作用。然而, 近几十年来发生的技术进步导致具有创造性的人类活动范围显著扩大。这种相互作用在“创意阶层”概念中被扭曲, 因为它由劳动者构成, 而这些劳动者参与的活动对经济结构演变产生了不一致的、甚至有时是矛盾的影响。创造能力的大部分被用于生产满足虚假消费的商品、操纵市场和诱导消费者的需求, 以获取利润。文章重点研究了俄罗斯的情况。在俄罗斯人类巨大的潜力正在逐渐退化, 经济结构变动决定了对这种潜能的需求水平很低。这种情况与20世纪20-30年代形成鲜明对比。当时苏联正在实施技术现代化战略, 其支点之一就是培训专业人才和发展科学研究。向在劳动活动中广泛利用创造性的模式过渡, 既需要逐步改变经济的技术结构, 也需要改变生产活动的标准, 摒弃经济合理性的标准, 转而采用理性和文化标准。这样的转型需要社会关系发生相应的变化, 形成合作和团结的关系, 也需要体制发生深刻的转变。  
**关键词:** 劳动内容、创造活动、技术、人的潜力、经济结构、智力经济。

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### Introduction

Usually, the change in the structure of the economy is assessed by such indicators as the various industries ratio or the different types of products ratio. It is determined what is the share of production in GDP, say, of mechanical engineering or transport, or certain types of products – for example, the share of oil production in GDP, etc.

The structure of the economy can also be assessed in terms of the ratio of workers in various industries in the overall number of the employed. It is calculated how many people are employed in industry, transport, trade, financial services, etc. It is not employment sectors that are to be evaluated, but professional groups. How many engineers, industrial workers, managers, vendors, waiters, etc., are employed in the economy.

Attempts to assess the structure of the economy in terms of differences in technological levels of production are made much less often. It is quite difficult to assess the technological structure of the economy, since there are no statistical indicators that would directly measure the level of technological development. Therefore, the technological structure measurement is based mainly on expert assessments. It is assessed what share does production have in the economy based on the particular technological paradigm. But, this type of assessment is quite rare, although it is made. Assessments in terms of differences in nature of activities that the people employed in the economy are involved in, are even more rare in the economic theory.

It cannot be said that science has not dealt with these issues, but they were raised mainly in the sociological sciences, and, moreover, initially only in their applied aspect, when the issues of

effective labor organization, motivation of labor activity, and similar ones were studied. These issues were developed in the classical works of F. Taylor, H. Emerson and E. Mayo [Taylor, 1911; Emerson, 1909; Mayo, 1933]. It was only after World War II did these studies receive a deeper theoretical orientation in the works of J. Friedmann, P. Thompson and W. Beck [Friedmann, 1950; Thompson, 1989; Beck, 2000].

At the same time, applied studies were carried out, in which the content of labor was more closely researched in terms of strengthening its motivation due to improving the quality of work, which should have led to an increase in job satisfaction [The Quality., 1979]. For example, the Tavistock Institute of Human Relations (London) was engaged in this kind of research, which carried out a number of experiments on so-called humanization of work, using the sociotechnical approach [Alter, 2015; Bednar, 2020; Mumford, 2000; Welch, 2020]. But even in framework of these studies, the mutual influence of the content of labor and the structure of the economy was not researched.

As for the economic theory, neither in its neoclassical version, nor within the new institutionalism, did it deal with the content of labor. And, accordingly, it did not assess its impact on economic structure.

In the USSR, the issues of the content of labor were studied by both philosophers [Volkov, 1972; Scientific personnel., 1991], and sociologists [Man., 1967; Changli, 1973], and economists [Vrublevsky, 1980]. But in economics, the content of labor was also studied either in its applied aspect, echoing similar sociological studies, or at the most abstract political economy level. The connection between changes in the content of human activity and changes in the structure of the economy has essentially not been studied, remaining at the level of dogmatic interpretation of the theses on the convergence of agrarian and industrial, physical and mental labor under socialism, and the transformation of labor into the first vital need [Gatovsky, 1979, p. 242; Changing the content., 1982].

In the West, in economic theory, attention to the content of labor in terms of its influence on development of the economic structure began to be paid, to some extent, in regard to introduction of the category of “human capital” into research. However, this category reflects only the cost side of evolving the content of labor, that is, investments in education, advanced training, vocational training and retraining. This can only indirectly indicate the complexity of labor, but it does not affect the qualitative features of its content at all.

### **Research methodology**

At the practical level, the relationship combining the economic structure and the content of labor, as well as the employees’ qualification has been caught for quite a long time. It was clear that technological shifts entail changes not only in the professional structure of the employed, but also in nature of their labor, which requires the relevant qualification, and the corresponding level of education and training. And without providing this training of workers, it is impossible to efficiently change the technological structure of production. For example, in the USSR, industrialization required significant efforts both to increase the level of elementary literacy of the population, and to considerably expand the network of vocational educational institutions at all levels.

So, by the beginning of the 1st five-year plan, there were only 31 thousand engineers, and 35 thousand technicians in the USSR industry. For ensuring the industrialization process, it was planned to train 176 thousand engineers, and 259 thousand technicians during the five-year plan

[Petrovsky, 1930, pp. 15–16]. The training of specialists with higher education was also increased. The number of students in higher educational institutions grew from 56.2 thousand in 1929 to 245.8 thousand in 1932 [Lapko, 1972, p. 12].

Moreover, there was an outstripping growth in the proportion of people employed in the R&D field. By 1925, there were already 42 research institutions in the system of the Academy of Sciences. A significant number of academic organizations were created on the basis of the Commission for Studies of the Natural Productive Forces of Russia (KEPS) [Romanovsky, 1999, p. 161]. In 1925, in the higher educational system, the postgraduate school was established. In 1927, the number of postgraduate students was only 0.9 thousand, in 1929, it reached 3 thousand, in 1933 – already 14.8 thousand, then decreased slightly, but in 1940, it reached 16.9 thousand [Allahverdyan, 2014, pp. 125–126; Lapko, 1972, p. 21].

What has been called the “information revolution” and the “knowledge economy” in the West, has also prompted increased attention to the content of labor, precisely due to the need for significant investments in education and vocational training. However, until now, the issues of the content of labor activity, despite the considerable attention to this problem in sociological and applied economic studies, are of little interest to representatives from the economic theory mainstream. For example, R. Florida’s sensational research dedicated to the creative class is work done not so much by an economist as by a sociologist and a management specialist. [Florida, 2002a; 2005b].

In our opinion, Florida successfully expressed the belief widespread among sociologists, that in conditions of the modern economy, its technological development, based on innovative processes, makes creative activity in demand for an increasingly broader group of people. Although, the criteria that he uses for determining whether a person belongs to the creative class (lifestyle, hobbies, etc.) are rather vague, which enables their arbitrary interpretation. Florida has a noticeable tendency to expand the concept of the creative class primarily due to the employed who, first of all, serve the interests of speculative financial capital, provide the production of simulated goods, and manipulation of the public consciousness. Even his teacher, Peter Marcuse, noted this in his works [Marcuse, 2003, pp. 40–41].

In its current form, creativity of activities, on the one hand, undoubtedly contributes to development of the economy, and, on the other hand, generates deep contradictions, both in the position of that stratum of people to be called the creative class, and in the relations of this stratum of creative workers, on the one hand, with the mass of ordinary employed, and, on the other hand, with representatives of capital. The creative class as a whole occupies a relatively privileged position: both in terms of working conditions and in terms of payment, being in a more favorable position compared to the mass of ordinary workers, especially of those in the service sector. At the same time, it is possible to state the instability of employment by many categories of creative workers, and the frequent use of creative labor potential not for development purposes, but for promotion of illusory goods and simulacra intended only for profiting from consumers. In fact, a significant part of the creative potential is spent on such activities, which, in general, contribute little to development of the economy, and sometimes cause damage to it. The huge potential of people’s creative abilities is used, for example, for the purpose of improving speculative operations in the financial market [Buzgalin, Kolganov, 2019, pp. 21–23].

Therefore, considering the economic structure in terms of its being influenced by the nature of the activities performed by people employed in the economy, we cannot reduce all representa-

tives of the creative class to a single assessment, since they solve different tasks. Despite the fact that their activities have creative components in their content, these creative activities have different impact on the development of economic processes and change in the economic structure.

Some types of creative activities contribute to the development of productive forces, enrich human culture, while others solve only tasks of increasing the material wealth of the narrow stratum of the ruling classes, leading to the hypertrophied development of such spheres as financial speculation or show business. Overcoming these contradictions is possible only in a qualitative, fundamental way. This requires rejecting creative activity subordination to the criteria of economic rationality, transitioning from economics to noonomy [Bodrunov, 2018, pp. 249–250], and only this basis can ensure transformation of the economic person into a creative one.

### **Main findings and their discussion**

What conditions are necessary for practical solution to the problem of transforming an economic person into a creative one? Is it enough for this transformation only the presence of creative functions in people's activities? No, it isn't. Because, firstly, rejecting economic rationality, and focusing on the development of human creative abilities as the main goal of production require significant shifts in social relations, on the basis of which production activities are performed (this will be considered in detail further). Secondly, at this level of economic development, creative functions are not inherent to the most numerous stratum of workers. In spite of the exaggerated size of the creative class given by R. Florida, relatively few people are actually engaged in creative labor. Yes, they have become considerably more numerous, in comparison with their number, say, 50 or 100 years ago. But still, this stratum is not numerous.

It should be emphasized that in Russia, this stratum has significantly decreased because of radical market reforms.

A paradoxical situation has developed: according to formal indicators, the ratio of the employed who have higher education has markedly increased. In 2005, higher-educated persons among the employed were 25.3 %, and in 2018, their share reached 33.6 % [Labor and Employment..., 2017a, p. 32; 2019b, p. 20]. At the same time, significant deskilling of the workforce was happening, and this process took place not only during the devastating recession of the 1990s. So, whereas in the 2010/2011 academic year, 581 thousand skilled workers and employees were trained, in 2018/2019 – only 169 thousand [Labor and Employment..., 2019, p. 89].

Under such circumstances, it is quite understandable that Russian entrepreneurs complain loudly about the lack of qualified personnel in the labor market. But what do the entrepreneurs themselves do to solve this problem? They seem to diligently create economic conditions that contribute to aggravation of this shortage of specialists and skilled workers. This can be judged by the too low wages for skilled labor, and the desire to reduce the costs for personnel training. Businesses (especially small- and medium-sized ones) often do not allocate funds for personnel training, and those large companies that still spend money on improving their employees' skills spend for these purposes about 0.5–0.7 % of the wage fund. As for the developed countries, there, large companies spend for similar purposes 5–10 % of the wage fund [Lebedeva, 2010, p. 86]. So, there seems to be a need for specialists, but, in fact, the effective demand for their services is represented within extremely narrow limits [Gimpelson, 2016].

This state of affairs depends not only on the stinginess or short-sightedness of Russian business (although these shortcomings are also inherent to it), but also on the objective situation

concerning the evolution of the Russian economic structure. Russian business, except for the extractive industry, financial and intermediary services, is mainly characterized by a low rate of profitability, and cannot overcome the macroeconomic, institutional and bureaucratic barriers that hinder the improved effectiveness of entrepreneurship. The state of the economy has been close to stagnation for a long time. And if the entrepreneur is not confident in the market expansion, then there are no incentives for significant investments, especially those in technological innovations. The technological degradation of the economy, which occurred in the 1990s, persists, there is no development of high-tech sectors of the economy and knowledge-intensive production.

In general, the rate of new jobs creation is kept at the level of no more than 4–5 % per year, and the rate of jobs attrition exceeds their creation – 5–6 % per year [Gimpelson, Zhikhareva, Kapelyushnikov, 2014]. At the same time, the technological degradation of production finds its expression in a reduction in the number of high-performance jobs, which turns out to be even more significant than in the economy as a whole. So, in 2015, their number decreased by 9 %, and in 2016 – by another 4.8 %. This decrease has most deeply affected the processing industry, education, health care, communications [Serebryakova et al., 2017, p. 256].

Therefore, the real demand in the labor market is mainly low-paid low-skilled and semiskilled workers [Gimpelson, 2016]. As a result, the most typical professions that are in demand in the Russian labor market include builders, drivers and vendors.

Technological simplification of the economic structure simultaneously undermines the material base for innovative development, and prevents the use of existing human potential for this purpose. Back in the 1990s, the position that innovative development is primarily supported by human capital was substantiated in economics [Nelson, Phelps, 1966; Romer, 1990; Redding, 1996; Aghion, Howitt, 1998].

Human capital is regarded “as the primary source of innovation, increasing individuals’ capacity both to produce technical change and to adapt to it.”<sup>1</sup> [Blundell et al, 1999, p. 16].

And this is not just general speculation. There are a number of empirical studies undoubtedly proving the connection between innovation activity and mastering new technologies with the accumulated human capital level [Benhabib, Spiegel, 1994]. From the studies conducted, it is not yet clear which of the factors is primary. Do technological development and innovative activity act as the source of the need for human capital, or does the availability of human capital determine the opportunities for innovative development and technological modernization [Blundell et al, 1999, p. 17]. Nevertheless, it is safe to say that the level of education and professional training is the factor that positively influences the accumulation of physical capital [Gemmel, 1996; Lillard, Tan, 1992].

Unfortunately, in the Russian economy, the identified interdependencies show their negative side. The low level of innovation activity and technological updating of production leads to the fact that there is little demand for human capital. The existing intellectual potential of the nation and creative abilities of the employed are far from being fully used for the economic development of Russia.

This unfortunate conclusion is confirmed by studying statistical data. One can quote the results from such a study, “the role of knowledge and information as a factor in production has decreased many times in the structure of factors of production. In the Russian economy, the return from the

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<sup>1</sup> The author’s translation, “...Human capital as the primary source of innovation, increasing individuals’ capacity both to produce technical change and to adapt to it.”

land factor (in the form of mining rent) is 31 times higher than from intellectual rent (for the United States, Germany, France, this ratio is less than 1). Investment in means of production in Russia outstrips investment in R&D by 28.6 times, in developed countries – no more than 6 times. Therefore, the share of industrial value added in the GDP in Russia is more than twice behind the level of the United States, Germany and France, and the share of high-tech exports in the GDP is 7–12 times. This is the main obstacle to the growth in the supply of high-paid jobs for technical specialists – the basis for the modern middle class, on the part of Russian industry” [Gasarov, 2014].

Thus, the good level of human potential available in the country does not yield the possible economic effect. If the technological level degrades, and the capital-to-weight ratio of labor decreases, then the best workers will not be able to demonstrate high-performance labor. This is clearly seen in the example of the mechanical engineering industry. There, reduction in production capacity outpaced the rate of personnel reduction, which meant a decrease in the capital-to-weight ratio of labor. In the Russian mechanical engineering industry, there are 4.7 employees for 1 machine, and in the EU countries – 0.8. As a result, in Russia, labor productivity in the mechanical engineering industry is six times lower than in the EU. [Economic..., 2018].

With no strategy for technological modernization, and, in some areas, continuation of technological degradation, this cannot but affect the demand for science, and, accordingly, the state of its human potential. There is a reduction in employment in the field of R&D, despite the formal growth in training scientific and teaching staff. Thus, from 1990 through 2016, the number of postgraduate students increased more than 1.5 times [Russian Science..., 2018, p. 32]. However, the personnel employed in the field of R&D diminished from 1,943.4 thousand in 1990 to 887.7 thousand in 2000. Moreover, this reduction continued, and in 2016, 722.3 thousand people were already employed in the field of R&D [Russian Science..., 2018, p. 28]. The intra-company R&D sector particularly suffered serious losses. In that sector, by 2018, the number of personnel fell to 51.1 thousand [Indicators..., 2020, p. 178]. With this number of people employed in the intra-company R&D sector, there is no need to talk about its real significance for Russian business.

This situation with R&D inevitably becomes a barrier to the development of an innovative economy. Over the past 20 years, the share of organizations engaged in technological innovations has practically not grown, and remains unacceptably low. In Russia, in 2017, this indicator was 7.5 %, which means flagrant lagging behind European countries. Thus, in Belgium, the same indicator was 62.1 %, in Finland – 58.2 %, in Germany – 50.0 %, in Estonia – 44.4 %, and even in Bulgaria – 19.8 % [Indicators..., 2019, p. 343].

The current situation is in sharp contrast to the efforts geared at increasing the human potential of the country in the 1920s – 1930s. But then the change in the professional and qualification structure of the employed was considered as an integral part of the industrialization strategy, which consisted both in increasing the share of industry in the economy and in transition mainly from the 1st and 2nd technological paradigms to the 3rd and partly to the 4th. This strategy was based on the relevant socio-institutional prerequisites, including the planned regulation of the structural adjustment of the economy, including the structure of employment. Even the GOELRO plan, adopted in 1920, assumed significant technological and structural shifts, the implementation of which prepared for the industrial breakthrough during the first five-year plans.

Of course, in the 1920s – 1930s, the shifts in the content of labor ensured the spread mainly of mass professions – industrial workers, to a lesser extent – engineers, designers, technicians, and quite incomparably with modern scales – scientists. It was not about mass mastering creative

functions in labor, although serious attempts were made to introduce creative elements into mass labor activity (for example, via the innovators and inventors movement).

In the Russian economy, there has not yet been any meaningful strategy for structural and technological modernization of production [Kvint, 2015] and the necessary strategy for training human resources.

Studies of the issues on the Russian economy lagging behind more developed countries show that the gap in human potential still plays a very small role in this lag. The analysis of multifactor productivity showed that the gap in Russia in this indicator from more developed countries by only 3 % (on average) is determined by the human capital development rate. The greatest contribution to this gap is made by the difference in the level of technological development – 61 %, and lagging in capital-to-weight ratio – 36 % [Zaitsev, 2016, pp. 17–20].

This could seemingly be the summary, without paying attention to the alarming facts about the human potential development rate in Russia, which were cited in the article above, and focusing only on improving technology and increasing the capital-equipping of labor. But more high-tech and more capital-equipped labor will immediately begin to make higher demands on employees' education and skills. Therefore, transferring the Russian economy to a new technological level will require the relevant investments in developing human potential.

## Conclusions

At the current stage of development, when the concern is about the widespread dissemination of the 5th technological paradigm and emergence of the 6th, the role of creative functions in labor is increasing significantly. But, in order for creative activity to become the property of the majority of the employed in the modern economy, there must be very significant shifts in the technological basis for production, towards forming so-called “unmanned production”.

However, it is still very difficult to say how and when this will be possible for a significant part of mass professions in the service sector. There is a very serious problem here, which is being developed in the research of our colleague A. Freeman [Freeman, 2015].

The problem concerns such types of labor that are fundamentally not replaceable by machines. And this does not mean that they cannot be replaced by machines because of their technological conditions. This is one side of the problem. There are some types of labor that, in terms of contemporary ideas, in general, in principle, will never be replaced by machines.

And there are some types of labor, the replacement of which by machines is simply impractical. For example, it is possible to replace the performer of, say, music by playing this music using a sound recording and sound reproducing device, and this replacement has been widespread since the 19th century. But for people's perception, live performance of music will always be more valuable than the use of technical devices. There are moments of such interpersonal psychological contact that cannot be provided by machines.

And, besides, it should be said that even the widespread dissemination of creative functions does not solve the problem yet, because the whole system of motives, goals and values of human activity must change, which, of course, change under influence of the content of human labor, but this process does not happen by itself. The condition for this transition is evolution of relations between people, evolution of socio-economic conditions in which they work.

And here, we can turn to S. D. Bodrunov's works that emphasize the need for changing relations between people in the spirit of solidarity, and evolving their cultural values in favor of self-realiza-



tion and development of human creative potential [Bodrunov, 2021b, pp. 28–29]. Material prerequisites for such shifts are laid, firstly, by technological progress leading to changing the structure of production and the level of needs satisfaction. Secondly, shifts in the content of human activity change the person's value and consumer orientations [Bodrunov, 2021b, pp. 78–79].

However, embodiment of the opportunity for evolving human relations in the spirit of solidarity into reality also requires shifts in the system of social relations and institutions. Discrete institutional alternatives have to be implemented, which will lead society away from profit-seeking institutions to institutions focusing on values of human creative potential development based on cultural criteria. It is precisely changes in value orientations based on changes in the content of labor that will also focus on such alteration in the structure of production, which will serve reasonable satisfaction of human needs, and development of human creative potential.

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### Information about the author

#### Andrey I. Kolganov

Dr. of Sc. (Econ.), Chief of the Laboratory of Comparative Study of Socio-Economic Systems, Economic Faculty of Lomonosov Moscow State University (GSP-1, Leninskie Gory, Moscow, 119991, Russia)

E-mail: onaglo@mail.ru