

**DOI: 10.32703/2415-7422-2023-13-1-227-230**

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**In search of driving factors of the social processes. Review of the monograph: L. A. Griffen. Missing link. Communication of productive forces and production relations: monograph. Odesa: Kuprienko SV, 2023. 147 pp. ISBN 978-617-7880-34-8**

Our time is distinguished by exceptionally turbulent social changes. Today, social processes are taking place at an ever-accelerating pace, which causes an increased public interest in the factors that are the cause of this phenomenon. There is no doubt that they are based on scientific and technological progress, or, in other words, the development of the productive forces of society. However, the desire of researchers to discover a direct connection between the achievements of science and technology and social changes has not been particularly successful – a direct relationship between them is not clearly traced. It is well known that changes in the productive forces lead to changes in the relations of production, and thus in the entire social system. But attempts to identify specific mechanisms that ensure this process have not yet yielded tangible results. However, they continue. The work under review is also devoted to this issue.

The monograph consists of 16 chapters. Its author is a specialist in the field of the history of science and technology, Doctor of Technical Sciences, prof. L. A. Griffen, having analyzed the current state of the issue, accepted as a working hypothesis the existence of such a social phenomenon as the social division of labor between the productive forces and production relations as a link between them. This phenomenon has long attracted the attention of researchers of social processes. However, it itself, recognized by them as an important factor in increasing labor productivity, being a complex and versatile phenomenon, was actually considered only from the indicated point of view. According to the author of this work, the reason for this was an insufficiently clear idea of the object to which this phenomenon refers - society. The author comes to this conclusion as a result of an analysis of existing ideas about society, which he finds insufficiently satisfactory. Therefore, he offers his own idea of it as a biological superorganism that exists and develops in its environment as a certain integrity.

This point is significant, since it characterizes the features of the relationship of society as a kind of self-regulating system with nature, with which society interacts through production processes. They are carried out through two operational social subsystems, which can be defined as its noosphere and technosphere, respectively, "responsible" for the



information and material interaction between society and the environment. From the point of view of Leonid Griffen, both of them include both ideal and material components. The noosphere (public consciousness) is formed on the basis of mental processes in the brain of the individuals that make up the society, united into a single whole with the help of special material formations that bind them – signs. Public consciousness processes information about the environment and fixes it (objectifies) in all material formations (culture) created by society, deobjectifying it as needed. The technosphere, on the other hand, consists of material objects (technical devices) placed by society between themselves and the environment, and “animated” by the consciousness and will of the individuals included in it.

Leonid Griffen shows that the production process, which carries out the interaction of society with nature, in its elementary form is a kind of vertical "chain" that includes a number of components. It begins with social consciousness, which determines the goal of a particular process and the ways to achieve it, perceived by the consciousness of the individual, who through its effectors (organs) through technical devices - tools - influences the object of labor taken from nature, resulting in an object of consumption. At the same time, as an additional effect, the development of the noosphere and technosphere of society takes place, that is, what is commonly called social progress. The positive consequence of the latter is an increase in labor productivity. However, at some point this development leads to a crisis. The information necessary for an individual to fulfill the role of a universal agent of society, due to their quantitative growth with insufficient generalization and structuring, ceases to “fit” in its individual consciousness, which begins to slow down the development of society. According to the author, the resolution of this contradiction was found in the social division of labor.

In the author's opinion, in this case, the production chain mentioned above already includes not one, but several individuals acting in parallel, distributing among themselves various parts of a single technology for the manufacture of a particular consumer item. This "horizontal" division of labor leads to an increase in its productivity. However, in the case of rather complex processes, the mismatch of their components in time and space, with a large number of performers, etc., independent distribution of duties turns out to be ineffective. As a result, another (already consecutive) link appears in the production chain – the individual who organizes this process, i.e., there is also a "vertical" division of labor. And this objectively puts individual individuals in a different position, not only technologically, but also socially, i.e., for the first time, social inequality arises. In the beginning, in a primitive tribe, this difference is insignificant and is more of a situational character. But gradually it is consolidated, on the one hand, increasing labor productivity, and on the other hand, introducing stable relations of social inequality into the previously egalitarian collective, which lead to its significant social transformations.

Leonid Griffen in his monograph argues that at a certain level of social development, this idea acquires a tendency to establish appropriate intercommunal relations, as a result of which one tribe conquers another. A new social organism is being formed with a new type of production processes in which the defeated become performers (the oppressed class

become slaves), and the winners become organizers (the ruling class). In other words, in place of social differences between individuals (and then their groups within the same ethnic group – strata) there are cardinal differences between the main production groups within the framework of a common multi-ethnic social formation – classes. A new era begins in the life of mankind – the era of class society. Based on social inequality, due to the “vertical” division of labor, it immediately sharply increases its productivity due to the synergistic effect. At the same time, all social relations are qualitatively changing – from property relations to ideology – in accordance with the new nature of the social division of labor, which can be traced in detail in the reviewed work.

Basically, the slave-owning states were a kind of "islands" in the sea of barbarian tribes. According to Leonid Griffen, due to higher labor productivity, they had the opportunity to expand territorially, gradually turning into large multi-ethnic formations, later called civilizations. Such expansion increased their power and the wealth of the ruling class. But at the same time it also led to an increase in contradictions with the surrounding social environment and to the disintegration of the slave-owning elite, with the slaves completely disinterested in the results of their labor. Which sooner or later ended in their disintegration under the blows of external forces. Over time, new civilizations arose in their place, consisting of separate feudal states. In them, due to the level of productive forces that had increased by that time, it became possible to individualize them with a corresponding increase in the interest of direct executors in the development of the latter. The feudal states constantly sought to push each other out, but with relative equality in development, the general situation in each region of the Oikoumene remained fairly stable. And so it continued until the end of the fifteenth century, when one of the civilizations suddenly received significant advantages over others.

By this time, Western European Christian civilization, thanks to a favorable climate and a favorable geographical position, had mastered the methods of navigating the high seas, resulting in long sea expeditions that led to the Great Geographical Discoveries, and, accordingly, to contacts with civilizations that were at a lower level of development. The author argues that due to their robbery and exploitation, Western European civilization has dramatically changed its position in the world, becoming dominant and establishing a new, already at the level of civilizations, "vertical" division of labor on the planet. The colonization of the more backward countries by the states of Western Europe began (and first of all by England, which even earlier began this process with the nearby patriarchal Ireland). A new socio-economic formation has been established in the world – capitalism as a global phenomenon. As a result of the exploitation of the colonies, the pace of development of the metropolitan countries increased sharply, which led to the so-called industrial revolution in them, radically dividing the nature of production in these regions of the world for a long time.

This went on for several centuries. Capitalism has significantly accelerated the pace of scientific and technological development of mankind. Of course, this mainly concerned the countries of the West, but to a certain extent it also affected the former colonies, and now “developing countries”. And in the countries of the West, during external integration

processes, the processes of internal differentiation continued, which caused the formation of transnational corporations, which found it more profitable to directly exploit cheap labor in "developing countries". This was done thanks to the industrialization of the latter through the export of capital. At the same time, the rates of their development increased, and in the countries of the West, as a result of their deindustrialization, they decreased. For example, today in the BRICS countries this is 7.5% of GDP growth per year, and in the United States with other Western countries – 2.5%. As a result, many recent "underdeveloped" countries are becoming less technologically and scientifically dependent on the countries of the former mother country, and sometimes even surpass them. And these processes are accelerating, exerting an ever-increasing influence on the entire system in financial, political, social, military and other respects. A global crisis of the international "vertical" division of labor has begun, which is steadily leading to its elimination.

In the history of mankind, this will be the first case of a decrease in the level of the "vertical" division of labor. But scientific and technological progress, and with it the development of productive forces, continues. Moreover, the latter are increasingly characterized by the transfer of production functions previously performed by humans to technical systems. Already today, most operations for direct impact on the object of labor, as well as providing energy for its transformation into an object of consumption, have been transferred to technical systems, which gradually reduces the need for direct human intervention. And the transfer to the latter of the functions of control and management of this process, which are largely associated with the "vertical" social division of labor, began at a rapid pace. As their technical implementation expands, here, too, direct human intervention will decrease, and accordingly, the need for a "vertical" division of labor will gradually disappear altogether. To an ever greater extent, the noosphere will interact directly with the technosphere until these operational social subsystems take over the entire production process, excluding a person from it. And only that which under no circumstances can be transferred to technical systems will remain with a person: general control of the goals and direction of the process, as well as innovation, concludes Leonid Griffen.

This conclusion follows from the author's basic premises. The reasoning given above is rather nontrivial so that a number of questions do not arise. However, it seems to us that they also arouse a certain interest in their peculiar interpretation of scientific and technological progress and its social consequences, which makes it advisable to recommend that specialists in the history of science and technology get a more detailed understanding of them by directly reading this work.

### **Conflicts of interest.**

The author declare no conflict of interest.

*Received 18.03.2023*

*Received in revised form 13.04.2023*

*Accepted 25.04.2023*