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Gleb A. Maslov

Center for Modern Marxist Studies, Faculty of Philosophy, Lomonosov Moscow State University
(Moscow, Russian Federation)

**Review of the book *A(O)nt(h)ology of Noonomy:
the Fourth Technological Revolution and its Economic,
Social and Humanitarian Consequences***

*(A(O)nt(h)ology of Noonomy: the Fourth Technological Revolution and its
Economic, Social and Humanitarian Consequences / Ed. S.D. Bodrunov.
SPb: INID, 2021, 388 p.)*

In late 2021, the Witte Institute for New Industrial Development published the book *A(O)nt(h)ology of Noonomy: the Fourth Technological Revolution and its Economic, Social and Humanitarian Consequences* [A(O)nt(h)ology of Noonomy, 2021] that included articles by a team of recognized national and international authors. This unusual, "double" title sums up the complexity of the topics covered in the book, which have to do with progress toward a new kind of social structure: Noonomy. Each author presents a different topic, but at the same time the articles are united by a comprehensive vision of global socioeconomic development in the present and future.

In many countries of the world, incomes have long been stagnant and there are high levels of inequality. The coronavirus pandemic has pushed inflation to a long-standing record high and labour market imbalances are increasing. Public discontent and socio-economic fatigue emerged quickly and seemingly unexpectedly (suffice it to mention the Freedom Convoy in seemingly always calm Canada). As the effects of the coronavirus wore off, instead of a respite, there was a dramatic geopolitical escalation with economic warfare on a grand scale. It should be emphasised that the rise in international tensions preceded the armed conflict between Russia and Ukraine and the threat of new flashpoints is real. All major influential countries are involved in the growing global confrontation, which will and is already having a negative impact on the entire world. In early 2022, the World Economic Forum report published a survey of experts that 5 of the top 10 challenges facing the world in the next decade are environmental [The Global Risks Report 2022, 2022, p. 14]. The global environment and climate problem has been urgent for a long time, but rather than being solved, it is getting worse and often becomes a subject of political speculation. All this indicates that the previous neoliberal development model is finally coming to a halt, the world seems to live from crisis to crisis.

The global economy is undergoing rapid change, largely related to the transition to a new, sixth technological mode. It is not just about the introduction of new technologies into production and the growth of the innovation component of the market economy. Non-market methods of satisfying needs are also spreading (e.g. free access to information, works of art). Technology also pushes for a new understanding of development – of one's place in nature. Man's part in nature's development is now taking on alarming proportions, but there are also answers to this challenge in technology, ways to improve the situation that society must address. In this way, the new material basis creates a fundamentally different framework for social life.

The basic interdisciplinary approach presented in *A(o)n(h)tology of Noonomy* is absolutely necessary to meet these challenges of a modern, rapidly changing reality. It should be emphasised that it is not limited to some contemplative, abstract theoretical content, but also contains the results of concrete measures of socio-economic policies.

In the first article of the book, S.D. Bodrunov (Director of the S.Y. Witte Institute for New Industrial Development, President of the International Union of Economists, President of the Free Economic Society of Russia, Corresponding Member of RAS, Doctor of Economics, Professor; the subject of the article: *What is Noonomy?*) presents the main imperatives of the theory of the new industrial society of the second generation (NIS.2) and Noonomy [Bodrunov, 2016; Bodrunov, 2018] in the context of the transition of the world economy to a "new normal", the increase of crisis phenomena. As mentioned earlier, the former model of capitalism has outlived its usefulness, objective reality poses the tasks it cannot properly solve. Contradictions of all kinds are increasing: limitless financialisation, inequality, destruction of ecosystems and many others. To explore the nature of these contradictions and the ways to solve them, a fundamental approach is needed, using the methods of schools such as classical political economy and traditional institutionalism. S.D. Bodrunov points out that in the new techno-economic phase, "the role of the main resource and the main source of development is shifting to knowledge – scientific knowledge of the environment" (p. 35). This is responsible for the emergence of the new second generation industrial society (NIS.2) [Galbraith, 1969], in which there is such a "knowledge intensity that will displace the material cost and effort of human labour" (p. 35). This objective and generally progressive movement is producing new forms of social relations (socialisation, the spread of property, the development of forms of sharing, etc.). The world is at a crossroads: either it follows this objectively designed path or it remains stuck in old, entrenched contradictions of the past. The author believes that despite the obstacles, the movement will evolve in an evolutionary way. It will eventually lead to Noonomy, a post-economic relation of being. The development of (automated) material production will become a technical challenge rather than an economic one in the usual sense. Humanity will set its goals based on the criteria of reason (noo-), which will be directed towards a harmonious, all-round development of human qualities. Noonomy will be promoted along four main lines (the author uses the expression "the quadriga of Noonomy"): material and technical foundations, new needs, human socialisation, solidary ideology.

S.D. Bodrunov's article is a kind of summary of previously presented fundamental work, taking into account new theoretical and empirical components.

The new decade has just begun, but it has already brought with it a series of dramatic events, so it is important to clarify and add to the theory developed earlier. S.D. Bodrunov provides a detailed justification and characterisation of the nature of socio-economic transformations and their vector. It is important to note that the author, quite rightly it seems, defines new technologies and a new role and position of people in the economy as the main driving force.

Sergey Glazyev (Minister of Integration and Macroeconomics of the Eurasian Economic Commission, Academician of RAS, Doctor of Economics, Professor; the subject of the article: *Noonomy as the Core of the Formation of a New Technological and World Economic Order*) relates the current economic turmoil and the aggravation of the geopolitical situation to the struggle for supremacy in the era of the new, sixth technological mode (the widely used Austrian term). According to the author, we are living in an era of decline of Western dominance and a shift in global economic systems. Important indications of the links between technology and geopolitical contradictions

were given. The latter have fundamental economic reasons rather than a local, subjective basis. In particular, China's growing power is a challenge to the US and its closest partners, prompting all sides to become more active in geopolitical and foreign economic policies. It is noteworthy that Glazyev shows solidarity with the main theses of the theory of Noonomy. At the same time, his conclusions suggest that change is taking place and will certainly be long and painful, and not in a smooth evolutionary course.

Article by J. Galbraith (Professor, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin (USA); the subject of the article: *Noonomy, Globalisation and the Pandemic*) focuses on the systemic weaknesses of the free market model that have been revealed during the pandemic. It has been shown that countries with active state involvement in the economy were better able to mobilise and respond to the challenge posed by the coronavirus. The author has raised two important issues that are often considered within the framework of traditional institutionalism: the implementation of the planning system in the market economy and the proliferation of simulacra, objects of demonstrative consumption. It should be emphasised that their importance is particularly increasing in our time. As computational power increases, so does the potential for large-scale planning mechanisms to contain market distortions in an era of global transformations. There is also an urgent need to adapt production targets to broader quality of life criteria. The reproduction of a large number of luxury goods, simulacra, wastes resources at the expense of a more meaningful use of resources.

O.N. Smolin (Academician of the Russian Academy of Education, Doctor of Philosophy, Professor; the subject of the article: *Contradictions of Technological and Socio-Economic Transformations: the New Role of Knowledge in the Process of Conversion to Noonomy*) agrees with the ideas of the theory of NIS.2 and Noonomy, which describe the essence of modern technical and economic transformations. Knowledge is a crucial factor in production, and its role will only increase. Major changes are to be expected in the world of work due to the automation of production. Under these conditions, the education system is crucial for the formation of the most important productive force: human qualities. These factors lead to a tendency towards the socialisation of the economy, which, however, has its objective limits within the current model.

It is difficult to disagree with these provisions, as well as with the fact that the transition to a new stage of development is unlikely to be rapid. It is important to point out that O.N. Smolin has systematically presented different levels of the social system (technological, industrial, educational) with successive transitions between them.

Chinese colleagues E. Cheng (Director of the Research Centre for Economic and Social Development at the Chinese Academy of Social Sciences, Leading Professor at the University of the Chinese Academy of Social Sciences, President of the World Political Economy Association (China)) and S. Gao (Associate Professor, Department of Marxism, Liaoning University (China); the subject of the article: *Intellectual Economy as a Form of Noonomy and its Socio-Economic Implications*) deal with the narrower concept of intellectual economy. The authors refer to it as "a form of economy that, based on the concept of the digital economy, uses intelligently perceived information and digitised knowledge as central factors of production and a new generation of intelligent technology as a driving force" (p. 178). The emphasis is on artificial intelligence as a key factor in ICT. This is leading to an unprecedented increase in the knowledge intensity of the economy and providing the space for the rise to Noonomy. But new forms of exploitation of immaterial labour are also emerging, where not only is surplus value extracted, but "life itself is exploited" [Negri, 2016, p. 4].

Furthermore, it should be pointed out that a risk and higher level of contradictions loom if labour market imbalances are systematically reproduced and high unemployment persists.

An article by A. Freeman (Director, Geopolitical Economics Research Group, University of Manitoba (Canada); the subject of the article: *Mental Objects as Productive Forces: Towards a Critique of Noonomy*) deals with various aspects related to the transformation of labour and the increase of creativity in production. The author's most important category is "mental objects". These are understood as products of mental labour that take many forms but retain their own identity and infinity (for example, there are many physical carriers of a literary work, but the content itself is unique and is not constrained by physical boundaries). As the author correctly points out, it has always existed (for all work is purposeful and a product of mental activity). But it is the intensification of creativity-intensive production that is consistent with the tenets of Noonomy theory. It is hard to disagree, and it is hard to deny that this shift is a prerequisite for moving away from the current socio-economic model. However, the concrete forms of the transition are not yet clear. In particular, a system of new incentives for creative labour (Freeman defines creative labour as essentially made indispensable by machines) has yet to be developed, something that is little discussed in academia.

Article by A.I. Kolganov (Head of the Laboratory for Comparative Studies of Social and Economic Systems at the Faculty of Economics, Lomonosov Moscow State University, PhD in Economics, Professor; the subject of the article: *The Predictive Potential of Noonomy for Justifying Development Strategies*) combines theory and practise. He shows that the theory of NIS.2 has become a "negation of negation", a critical response both to the previous understanding of industrial development and to the concepts of post-industrial society. The chain "old" industrial society – NIS.2 – Noonomy is constructed.

Transitional phases are accompanied by fundamental technological shifts, but they work in the same direction. They are related to an increase in knowledge-intensive, automated production, which will later be the basis for the displacement of humans from material production (the author emphasises this as a central point of novelty in the theory of Noonomy). This consideration of the potential of theory and its predictive power is particularly important in our time of change, when economic science needs to be renewed to meet the new challenges of practise. Unlike many more widespread approaches, the theory of NIS.2 and Noonomy does not suffer from inertia and unpreparedness for the emergence of qualitatively new phenomena, which actualises the study of its internal logic and research possibilities.

The application of the questions addressed in *A(o)n(h)tology* is also necessary at the national level. The Cuban model offers a radically different economic model, and despite all the difficulties, Cuba has achieved impressive results in the field of human development (especially health), which is a key area of the new economy. J.P. García Brigos (Leading Researcher, Institute of Philosophy, (Cuba); the subject of the article: *Science and Technology: Property and Social Progress through the Cuban Experience*) examines the Cuban experience, specifically addressing the issue of the widespread adoption of science and technology from a Marxist perspective. The author stresses the importance of developing the institutions of self-government to make the transition to a world dominated by a new kind of technology and new development goals. These conclusions are perhaps valid for other countries as well. There are universal patterns of transition to the new techno-economic reality, regardless of the model a country has followed from the beginning.

In these times of heightened international controversy, one can appreciate the importance of the article by R. Desai (Director, Professor, Geopolitical Economy Research Group, University of Manitoba, Canada; the subject of the article: *Noonomy and Geopolitical Economics: Natural Allies*) on geopolitical economics. The author argues from a Marxist perspective that neoliberalism is a dead end. The severe consequences of the pandemic are emblematic of the fragility of the existing socio-economic system. This makes it impossible for the West to maintain its hegemony and multipolarity is gaining ground in the world. China's power and influence are growing, and the state as an institution that complements and corrects the workings of the market is playing an increasingly important role. As R. Desai points out (and it is hard to disagree), geopolitical changes are not only driven by their internal logic. They are also driven by global changes in technology, labour content and environmental relations. It is probably for this reason that the article is titled *Noonomy and geopolitical economics: natural allies*, to suggest that these fields complement each other. Indeed, there are certain main lines of development of capitalism that have a significant impact on certain areas of social and economic relations. The latter should be studied in a holistic, systemic way, rather than being limited to narrow, internal issues.

A.A. Porokhovsky (Head of the Department of Political Economy, Lomonosov Moscow State University, Doctor of Economics, Professor; the subject of the article: *The Development of the Object and Method of Political Economy at the Beginning of Digitalisation*) addressed in his article the question of what role digitalisation plays in the modern economy and how this process is reflected in theory.

The study of contemporary socio-economic transformations holds great potential. It reveals new micro- and macro-level contexts that reflect, among other things, the impact of the fourth industrial revolution. With regard to digitalisation, the author argues that although it is ubiquitous, it "does not lead to significant productivity gains in any economy" and "in economic terms, this means that digitalisation has the greatest impact on the infrastructure of the economy, i.e. its development environment, including the labour market" (p. 356). This is a very important point made by Porokhovsky, which underlines the fact that today we are primarily dealing with qualitative changes rather than fluctuations in various quantitative data. This in turn suggests that the old methods of describing the economy are increasingly outdated. GDP, for example, says less about the actual quality of life and the fetishisation of this indicator is at odds with more important development goals.

In the last contribution by L. Gabriel (Director of the Institute for Intercultural Research and Cooperation (Austria); the subject of the article: *Noonomy in the Transition to a Post-Capitalist Society: Perspectives on the Global Economy of the South*) the possibilities of various social movements to move towards more social models are presented. In this context, reference is made above all to the projects developed in the global South. Even if the material conditions for the economic transformations already underway in the richer countries are lower, this does not mean that they cannot develop according to more progressive criteria. In particular, it is important to give priority to human potential, responsible and sustainable consumption patterns, etc. priority, which is closely related to the theory of Noonomy. This article raises the crucial issue of mass social engagement and its role in social change, which clearly needs further in-depth study.

In summary, it is worth reiterating the importance of the book *A(o)nt(h)ology of Noonomy: the Fourth Technological Revolution and its Economic, Social and Humanitarian Consequences*. We are on the threshold of unprecedented global change. A broad interdisciplinary approach is needed

to understand the processes taking place and to develop practical recommendations. Under these circumstances, the narrow mathematical approach of economics, which focuses on the study of local functional relationships, cannot be avoided. The attempts of "mainstream" economists to go beyond their traditional field and presumptuously construct a "model of everything" that would explain the fundamental changes taking place before our eyes do not lead to a satisfactory result due to the limitations of the methodology. In this context, it is appropriate to recall a quotation.

The "father" of cybernetics, N. Wiener, warned economists against blindly imitating the mathematical rigour of the natural sciences: "Both mathematical sociology and mathematical economics or econometrics suffer from a misunderstanding of how to apply the mathematical apparatus to the social sciences and what can generally be expected from the application of mathematical methods... Under these circumstances it is hopeless to find very precise definitions of the values that come into play. To ascribe any special precision to such inherently indeterminate quantities is useless and dishonest, and to apply exact formulae to these all too freely definable quantities under whatever pretext is nothing but a deception and a waste of time¹.

Thus, there is a need to disseminate heterodox approaches, including the traditions of old institutionalism and political economy. *A(o)nt(h)ology of Noonomy* fulfils precisely this function. Dialogue with its authors, and a general continuation of the debate on fundamental questions of our socio-economic life, is undoubtedly important to develop further.

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Information about the author

Gleb A. Maslov

Cand. of Ec. Sc., Senior Researcher at the Institute of Economics of the Russian Academy of Sciences, Researcher at Center for Modern Marxist Studies of Faculty of Economics at Lomonosov Moscow State University (1 Leninskie gory, Moscow, 119991, Russia)

E-mail: glemiach@yandex.ru

¹ Wiener N. The Creator and the Robot. Moscow: 1966, pp. 99-100.