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RESEARCH ARTICLE



From ZOO to NOO: Man, Society and Production in the New Technological Revolution

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ABSTRACT

The long-term socio-economic impacts of the imminent technological revolution are expected to give rise to a second-generation of the new industrial society. Technological change poses the threat of crises due to the pursuit of superficial benefits, excessive pressure on the natural environment, uncontrollable trends in the evolution of the technosphere, and potentially, unjustified interference with human nature. This raises the question of making the transition from a zoological drive aimed at the consumption of increasing amounts of material resources, to a rational self-restraint regarding both human needs and the application of new technologies. This transition can potentially enhance the satisfaction of human needs while simultaneously reducing pressure on the natural environment. However, there must be a shift in people's motivation. This involves moving away from the pursuit of material goods and from the satisfaction of false needs inflated by a market-driven economic rationality. Instead, there must be a transition to a non-economic mode of production known as Noonomy. If this path is followed, it will become possible to address the pressing issues of development—both of civilization and of the individual—and to mitigate social conflicts through an objectively increased socialization of society based on the ideological foundation of solidarism.

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Introduction

Modern civilization is clearly confronted with escalating challenges for which human society has not yet provided an effective response. These challenges include the poverty and misery experienced by hundreds of millions; unprecedented inequality of access to public goods, not only among individual segments of the population but also among entire countries; artificial suppression of human development; the vulnerability of the global economy to shocks; and many other related issues. Additionally, these challenges include ecological problems such as the massive scale of environmental pollution and loss of biodiversity; the threat posed by weapons of mass destruction; and the risks arising from interference with the biological and cognitive nature of human beings.

Given the presence of so many escalating human-created problems, is human socio-economic behavior truly reasonable? The modern human species, historically subordinated to economic necessity through the struggle for subsistence and now oriented primarily towards economic rationality in behavior and social practice, is essentially *homo economicus*. If humanity is to survive and continue to develop, this mode of existence must become a thing of the past. Humans are evolving and must inevitably change in a direction that will allow them to be called, finally, a true *homo sapiens*—a person of reason.

Our analysis focuses on the observable changes in the economy and society, on the challenges of “constructing” a positive future economic and social structure, and on discussion of the tools required for achieving an effective and minimally conflicting transformation to this future state.

Civilization in the Face of Challenges

The modern global socio-economic system and its components—economy, society, and humanity—are in a state of systemic crisis. With the increasing complexity of the global economic system, due particularly to the transition that is occurring to a new technological and global economic structure, the future is quickly growing much more uncertain. Consequently, the prospects not only for development, but also for the continued existence of human beings and civilization are becoming increasingly precarious.

Clearly, the crisis that has begun is all-encompassing. This has had a profound effect on the entirety of the relations of production and economic institutions. Market mechanisms of self-regulation, which form the basis of the current socio-economic system, are increasingly failing. The “invisible hand of the market” is directing humanity towards financial speculation and the predatory exploitation of resources, encompassing not only natural and material assets but also labor and intellectual resources.

The historical futility of the ongoing struggle for global dominance has been exposed, leading to intensified trends towards deglobalization as a reaction to these efforts. This, in turn, risks splitting the world into rigidly opposing blocs. Global economic-political interactions are in crisis, and the geopolitical and economic configuration of the world is experiencing a profound breakdown. The trajectories of the changes underway are dark and contradictory (Desai 2013).

Increasing trends are emerging towards the reactive development of new-generation technologies and industries. Processes such as the digitization of economic relations, the shift to telecommuting and online education, robotization, and the use of artificial intelligence have accelerated. At the same time, technogenic risks have increased, along with a highly unequal distribution of opportunities for people to benefit from these technological advances (Schwab and Malleret 2020).

Also alarming is the growing replacement of genuine human communication with virtual interactions, and the tendency to address real-life problems exclusively in the virtual realm. This shift risks transforming individuals into consumers of virtual reality rather than nurturing them as researchers and creators (Sorotsky 2012, 230). The increasing efforts by both states and major corporations to establish total digital control are also cause for concern.

Where is the way out?

The Second-Generation of the New Industrial Society (NIS.2)

The current level of global social production, reflecting the achievements of modern scientific and technological progress (STP), makes it possible to begin addressing most of the aforementioned problems. Nevertheless, these problems persist. This represents a fundamental contradiction of modernity, a contradiction that is being exacerbated as technological progress continues while outdated economic models are maintained. Instead of solving or mitigating accumulated problems, the achievements of technological progress often serve to intensify them. The economy, which originally had the primary, essential purpose of creating the material conditions for people's livelihoods and of providing a rational mechanism for meeting their needs, has begun to assume a self-sufficient role in society. Through increasing financialization, it is destroying and deforming areas that are inherently limited in their commercial viability, or that cannot be commercialized at all without fundamentally distorting human consciousness.

The growing problems threatening humanity raise the question of the further evolution of human civilization to a new stage, where the expansion and consolidation of the opportunities created by new technologies becomes feasible. This transition pertains to the next generation of the new industrial society.

The new industrial society that John Kenneth Galbraith (1967) wrote about has largely been left behind. The march to a post-industrial future, proclaimed in the last third of the twentieth century, never materialized, although theorists of post-industrialism accurately predicted many aspects of the changes that occurred (Bell 1973; Sakaiya 1991; Smart 2011). Despite a significant increase in the share represented by the service sector in the economies of developed countries, material industrial production remained the technological core of the economy (Bodrunov 2021a). The increasing role of knowledge has not caused it to replace material production, but has led to a new stage which is providing the basis for a transition to the second-generation of the new industrial society (NIS.2) (Bodrunov 2016).

Throughout the history of societal development, there has been a continuous increase in the relative share represented by knowledge in all components of production and in the final product. This has been accompanied by a relative decrease in the share of the "material" component. However, it is incorrect to conclude that the determining role of material production itself is diminishing. Instead, the continuous growth in the knowledge intensity of material production (Bodrunov 2018a, 8) suggests a transition to a qualitatively new type of material production: knowledge-intensive production. In this production, operations and processes take on a determining role, with humans acting not as mere "appendages of the machine" (machine, conveyor), but as carriers of knowledge. In this context, man "stands beside the production process" and "relates himself to that process as its overseer and regulator" (Marx 1969, 213).

The transition to NIS.2 creates a set of prerequisites for moving towards the formation of a non-economic mode of satisfying human needs, towards Noonomy (Bodrunov 2018b).

New Opportunities to Meet Needs, and New Risks

The modern economy has already established the material prerequisites and technological capabilities necessary to meet human needs, at a significantly higher level than ever

before. The capitalist market economy has demonstrated an enormous potential for increasing production and consumption. However, the growth of production and consumption driven by profit often results in producers prioritizing the expansion of sales of goods and services over consideration of the nature of the needs being satisfied.

As early as the final years of the nineteenth century, Thorstein Veblen (1899) described how certain consumer groups pursued status symbols rather than focusing on real benefits. In the latter part of the twentieth century the prominence of simulated needs and simulated benefits spurred philosophical reflection on the nature and significance of these phenomena. The renowned French postmodernist Jean Baudrillard (1972, 1981) and the American philosopher Fredric Jameson (1991) both developed analyses of “simulacra.”

Behind the irrational, simulated needs and the simulated goods that “satisfy” them, there are nothing but illusions. Simulacra function as signs devised to satisfy merely imaginary needs, even though this simulacral component is often attached to a genuinely useful product, thereby inflating its price through additional imaginary value perceived by the consumer. The simulacrum, meanwhile, is not just a social phenomenon. The mass production of simulacra has led to the emergence and establishment of a vast market of simulacra, which has become a significant component of modern economies (Buzgalin and Kolganov 2012). It should also be noted that the modern market economy often exaggerates simulated needs in order to boost sales volumes.

The Current Consumption Model Leads to an Ecological Dead End

The result is the formation not just of a society in which the pursuit of increasing consumption knows no bounds, but also of an economic apparatus designed to inflate imaginary needs and the equally imaginary means to satisfy them—an apparatus that nonetheless consumes very real resources. Up to certain limits, the Earth’s ecosystem has been able to cope with the consequences of human beings disturbing the natural balance. In recent years, however, the capacity of this ecosystem to renew exhausted natural resources has been greatly exceeded (Global Footprint Network 2020). The impact of diverse forms of pollution is increasing, resulting in disruptions to the biosphere and human habitats, disturbances in climate balance, loss of biodiversity, and potentially, other consequences not yet fully understood (Karlovich 2004). The rate of extinction of living species has already surpassed the natural rate by many times (Knight 2012; United Nations Sustainable Development Goal 2019; Brondizio et al. 2019).

Meanwhile the unchecked expansion of the technosphere, driven by the criteria of economic rationality and specifically by the pursuit of “market efficiency,” is having perilous and poorly controlled consequences. The number of technospecies (species forming human-made technocenoses) has reached approximately one billion and is rapidly surpassing natural biodiversity (Zalasiewicz et al. 2016). In reality, human-created technocenoses suppress biocenoses, and technogenic species often displace biological ones (United Nations Sustainable Development Goal 2019).

This problem has been recognized for a long time, with scholars and public figures sounding the alarm ever since the sensational 1972 Club of Rome report on the limits to growth (Meadows et al. 1972). Green movements around the world support this

concern, and internationally the issue of sustainable development has been on the agenda for many years.

All this concern and all the decisions taken, however, have not yet led to any significant practical steps to prevent the ecological crisis.

The New Look of Production—New Goals and Needs

This situation is inevitable in a world where the challenges posed by the development of human civilization are addressed primarily through achieving the economic benchmarks of success. Without a gradual shift away from the primacy of these economic criteria, and a prioritization of truly human-centered criteria that determine the achievement of specific human development goals, this global contradiction cannot be resolved. We need a transition to social relations in which the economic activity required to satisfy human needs is not determined primarily by economic criteria. This becomes objectively possible insofar as vital needs are satisfied, and other, non-economic needs come to the fore. In the first place, it involves harnessing the benefits of culture, elevating human personality and intellect, and developing the human capacity for self-realization on this basis.

Humanity's transition to the stage of NIS.2 entails increased opportunities for individuals to move away from direct participation in the production process, allowing them to expand their leisure time and develop their abilities. However, it should not be assumed that even under these conditions the structure of human needs, shaped by the economic society that has cultivated *homo economicus*, can be simply and easily changed. Hannah Arendt expressed concerns that this might not be the case: "*Animal laborans* never spends its excess time on anything but consumption, and the more time is left to it, the more insatiable and dangerous its desires and its appetite will become" (Arendt 2000, 171; emphasis added).

These concerns are justified. In the reality observed by Arendt and in which we still live—namely, in the world of capitalism and the market—the behavior of most people indeed reflects this pattern. The entire machinery of marketing, advertising, deception, and the cultivation of superficial needs and pseudo-progressive values in mass culture aims to encourage people to strive for maximum consumption and to work tirelessly to earn and consume again.

How can a person break out of this self-generated vicious circle?

The material prerequisites for moving to a different path of social development and resolving society's contradictions are already evident in the changes to our social existence brought about by the new technological revolution, often referred to as the fourth (Schwab 2017). To understand the essence of this leap, we have to start with some preliminary methodological remarks.

The Monetary Form of Needs, Values and Motives Is Gradually Discovering Its Limits and Being Transformed

The existing economic relations, based predominantly on various forms of private property and regulated markets, are often referred to as "natural," aligning with the biological

nature of humans. Less frequently, but still regularly, economic relations are likened to a struggle for existence, with humans portrayed as selfish predators by nature.

We cannot deny that today's economy is dominated by relationships of market competition, and that most economic actors are not oriented towards solidarity and mutual assistance. But the new century is bringing qualitative changes in both the technological and socio-economic spheres, changes about which the author of these lines has written many times (Bodrunov 2016).

To begin with, the market of the 21st century is very far from the abstractions set out in the first chapters of *Capital* ([1887] 1995) or in textbooks on microeconomics. Despite differences in defining the nature of value, both sources assume that the market operates as a system of relationships among individual actors seeking to maximize income and minimize costs.

Today's economy encompasses the production of both private and public goods, alongside various social transfers and other factors. It can reasonably be assumed—and there are many to whom this hypothesis would not be surprising—that workers, consumers, and entrepreneurs today are focused not only on maximizing monetary income and minimizing costs, but also on developing their human qualities (including in non-market activities), as well as achieving job satisfaction and other non-monetary ends. This is all familiar to any entrepreneur who organizes a staff incentive system. Consequently, humanity today embodies not only “Zoo” characteristics (that is, related to zoological drives) but also “Noo” traits (rational and oriented towards human values).

Noo-production: The Future of Humanity and the Economy

Changes in future technologies and economic relations are closely linked to the emergence of a new type of human activity, and consequently, of a new type of human being. Technological advances that may appear futuristic today but will likely become prevalent in the next few decades require economic preparation, starting now. The ongoing development of a complex of nano-, bio-, cogno-, and information technologies is laying the groundwork for what is often referred to as the sixth technological mode (The United Nations Development Programme 2011).

Humanity stands at one of the most crucial junctures in its history: it faces a choice between advancing towards a rational human society or heading into a potential dead end—represented by a technocratic society where the elite satisfies increasingly inflated and often simulated needs, while the majority of people are employed in a service sector that is becoming predominant.

The above choice compels us to examine closely the phenomenon of the noosphere.

The idea of the noosphere was originally proposed in the late 1920s. The Catholic philosophers and naturalists Edouard Le Roy (in lectures at the Collège de France in 1927 and in a publication of the same year) and Teilhard de Chardin (in an unpublished work of 1925) were influenced by lectures delivered by V. I. Vernadsky at the Sorbonne from 1922. For the history of how the concept of the noosphere developed, see Novikov and Rezhbek (2010). The idea was then developed (from 1936) into a theoretical concept by the outstanding Russian thinker Academician V. I. Vernadsky (1944, 1991), and since the middle of the twentieth century has been firmly integrated into the scientific research of a wide range of geographers, sociologists, psychologists and especially, ecologists.

Vernadsky's main thesis—that starting from the twentieth century, human beings have become the primary geological force responsible for the reproduction of the Earth's biosphere—has been repeatedly confirmed by historical practice, both positively and negatively. Technogenesis,¹ which involves the creation of the technosphere and the accumulation of technomatter within it, is already competing with biogenesis and the biosphere in terms of the mass of matter involved and energy consumption. The technosphere has become a colossal and already largely human-independent force, a situation that only increases the responsibility of humanity to bring this force within reasonable bounds.

The development of the noosphere, as its logic unfolds, has the most direct relation to the fate of the economy. Humanity is gradually distancing itself from direct participation in production, a change that has nothing to do with utopias. Accordingly, the interactions and relationships between people regarding the relevant activities will diminish. We may surmise that “Industry 4.0” based on robotics, the Internet of Things, etc., already represents a material preparation for this kind of change. But in what direction will humanity now evolve?

We are not inclined to idealize either the theory of the noosphere or its emerging manifestation, the noo-society, whose associated production modes and novel social relations diverge from traditional economic paradigms. The noosphere is something that does not emerge by design, but that arises as an inevitable product of the development of human society at a certain stage. The formation of the noosphere does not in itself guarantee the advent of the “kingdom of good,” and further, the existence of the noosphere immediately raises the questions of what imperatives of reason will prevail in it, and of how reason will be employed. Will reason be an instrument of development, or of destruction? The concept of the noosphere does not provide answers to these key questions, since it is not based on a concrete understanding of the material prerequisites for the transition to a noosphere.

The Material Foundations of the Transition to a Noo-society

Our analysis of objective processes that have recently begun to develop indicates that in a noo-society, social production is structured as a system that includes the following elements:

- (1) prioritized development of knowledge-intensive, “smart” production (described as noo-production);
- (2) resulting integration of production, science, and education within unified reproduction frameworks, leading to the formation of a new type of reproduction—noo-reproduction—that prioritizes the conditions for the development of the noosphere;
- (3) gradual reduction of the role of utilitarian and simulative needs and the rise of a new class of needs—the needs of a “reasonable person,” or noo-needs;
- (4) the development of new, corresponding values and motives of activity of the main subjects of material and spiritual production, so that these values and motives cease to be economic;
- (5) the transformation, during the transition period, of economic relations and institutions in the direction of their socialization and humanization; and
- (6) the elevation of culture as a sphere that ensures the solution of key tasks of noo-development.

Noo-production, however, will function more as the production of humanity itself rather than as production of the material conditions for humanity's existence. Moreover, the very provision of material conditions of existence ceases to be the direct work of human hands. Marx's prediction of the displacement of humans from direct involvement in material production is being realized. Humans will influence this sphere not through manual labor but through the power of knowledge.

In a previous century, a well-known classic author wrote that the future of humanity—the “realm of freedom”—lay beyond mere material production, within the realm of culture. This thesis was actively developed by intellectuals of the 1960s, and since then, has been further elaborated by contemporary thinkers such as Ewald Ilyenkov (1991), Vadim Mezhuiev (2009), Lyudmila Bulavka-Buzgalina (2017) and others. They rightly observe that culture is the primary sphere of activity both for rational individuals and for rational societies.

It should be noted, however, how Marx continued his above remark: he emphasized that this world of culture can flourish only on the basis of appropriate, highly productive material output. This is why carrying out production on the basis of the second-generation of the new industrial society is so important. Only on this basis can we begin to move towards non-economic noo-production. The transformation of humankind's fundamental activities precipitates a shift in the entirety of its value systems and needs.

Prerequisites for Transforming the System of Human Needs

Human beings are defined by their actions. “The subject is not confined solely to the realm of consciousness and will, but is also the agent of activity that shapes the entire cultural world of the social individual, human *reality*” (Batishchev 2015, 200; emphasis added). If an individual's activities involve consciously creating his or her own cultural world, then both cultural imperatives and the noo-criteria of existential structure will become the foundational elements of the criteria that are basic to the person's existence. These elements will guide their decision-making, including in areas related to production and consumption. As the person's activities become predominantly creative, their preferences will gradually shift from the pursuit of material goods and services to seeking self-realization through creative endeavors.

Another prerequisite for transforming the system of human needs is the development of human activity in the cognition of the world and of the individual, while understanding the limitations that a rational approach imposes on both production and consumption.

A third prerequisite lies in the realm of consumption itself. Satisfaction of the needs of human life provides an escape from the struggle for existence, from the fear of underconsumption, and thus creates the conditions in which needs of this kind increasingly become secondary.

Technological progress and evolving changes in economic institutions lay the groundwork for the fourth prerequisite: the socialization of society and the development of human personality noo-traits. The progress and changes involved here include the steady transformation of the way in which needs are satisfied from predominantly economic to non-economic, along with the diffusion of property driven by advancements in new technological modes (Bodrunov 2021b). As society develops, individuals are increasingly

compelled to acquire (and are acquiring) greater social responsibility. They become more “social,” more responsive to the cultural imperatives of life, and more engaged in fulfilling their social mission, moving from “Zoo” to “Noo.”

The four factors listed above thus create the basis for realizing the possibility and necessity of people achieving their self-determination as reasonable individuals—truly reasonable people who realize and establish for themselves, through the power of reason, the boundaries and levels of satisfaction of their needs (including personal consumption). To go beyond this means making an exit into the sphere of the unreasonable, that is, of the “non-human,” in which people fail to meet the criterion of *sapiens*.

Reduced Conflict and New Inequalities

Achieving this self-determination means that a person is able to overcome the pursuit of material goods and the illusions arising from false needs imposed by the market. Instead, the person turns to the development of truly human qualities. Accordingly, this development creates prerequisites for reducing the conflictogenicity (prone to create conflicts) of human development.

We concur with the well-established philosophical concept which posits that progress cannot occur without the resolution and re-emergence of contradictions. However, considering the current level of global tensions, it must be acknowledged that the present period differs significantly from any other in the history of human civilization. The advanced state of modern military technologies no longer allows us to rely on their protection if they are employed to resolve conflicts.

Is it possible to avoid the catastrophes this implies? There is no question that the current socio-economic system inevitably gives rise to political, economic and social conflicts. Moving beyond this system is also unlikely to be free from conflict. Nevertheless, the current state of knowledge regarding social reality and the level of productive development allows us to anticipate, prevent, or at least mitigate social collisions. In terms of satisfying human needs, the current level of development creates the potential for social compromise, rather than dictating an unyielding struggle for resources as was necessary when this struggle was synonymous with the fight for survival.

The mitigation and then removal of social conflicts does not mean, however, the elimination of social contradiction as such. In Noonomy, the primary objective of production and, simultaneously, its key driving force is human creative self-realization. Consequently, the source of the new inequality will be the capacity of each individual to master the tools for their own self-actualization. There will no longer be economic barriers to the acquisition of knowledge, information and the benefits of culture, for the purposes of training and professional development. However, there will remain differences based on people’s varying individual capacities.

Therefore, inequality based on differences in the level of development of individual creative abilities will persist. This will encourage the pursuit of cultural and educational advantages, promoting self-actualization, but it will not serve as the basis for privileges in property ownership, or for the division of society into opposing social groups and classes. A member of a noo-society, a true *homo sapiens*, will live in a highly socialized community. The fundamental values of this society will include the concept of unconditional

social responsibility and the requirement for conscious and collaborative efforts to resolve social and personal conflicts.

The Interests and Values of Economic Society

The interests of modern individuals are a reflection of the economic relationships they engage in throughout their lives. Of course, there are also non-economic interests, which may also have great importance for deciding people's individual destinies. When it comes to mass socio-historical processes, however, economic interests invariably come to the fore. This is inevitable in a society where the economy occupies a predominant position, determining the fundamental conditions of human existence and the course of daily life.

Society enshrines in moral standards those values that support the operation of the prevailing system of economic relations, and that allow individuals to pursue their interests within this dominant framework. "The discourse of morality in economic terms coincides with the proclamation of the problem of debt as the center of moral problems. The morality of obligation represents nothing but the *value legitimization of exchange relations*" (Ashkerov 2002, 79; emphasis added).

Modern values thus bear the deep imprint of economic rationality, in its specific refraction for a market-capitalist society. The values of such a society appear in the overt form of the morality of pure money at any cost. However, this is not the only vector of the values of market-capitalist society or of economic society generally. Another is recognizing the values of hard work and thrift. This is a logical addition, since for most people who are not entrepreneurs, hard work and thrift can make up at least partially for their reduced economic status, and provide some level of individual well-being.

Does this mean that in today's society there are no values of a different orientation? Indeed, there are, with altruism, solidarity and creativity among them. The social significance of these values is quite evident. Under the current socio-economic order, however, they cannot occupy dominant positions.

Economic rationality was once the primary driver of social progress, fostering a spirit of enterprise and innovation coupled with prudent economic planning on the one hand, and a culture of hard work and discipline on the other. The development of society has made significant progress, creating powerful productive forces both in terms of the latest technologies and of the human knowledge embedded in them. New opportunities have arisen for human development and for the fulfillment of diverse needs. Capitalism has made this possible, ramping up the speed of technical and scientific progress for the sake of satisfying consumer demands. Increased consumption, it would appear, has become the ultimate goal: "In the value chain 'new technologies—economic growth—increased consumption,' the last link is viewed as a priority element. Explicitly or implicitly, all actors of globalization accept this value chain as an expression of universal values" (Stepin 2015, 163).

The Expansion of Economic Values as an Expression of Their Crisis

The values of economic society, which arise from economic interests, also influence those values that are formed outside the economic realm of society considered in the strict

sense. Phenomena such as marriages of convenience, for example, have been around for a very long time. Though widespread, these phenomena in the past were not universal, and were subject to moral judgment, albeit often quite hypocritical. Now, human feelings and non-economic social phenomena in general are beginning to be measured by the standards of economic rationality. In economic theory, an influential current of “economic imperialism” has emerged, claiming to explain all social processes according to the laws of economics. At the same time, all values that exist outside the economic sphere are declared to be conservative and outdated. The criteria of love, goodness, beauty and truth are considered conditional, relative, purely subjective, and ultimately non-existent. Only the criteria of benefit remain unconditional.

These attacks need an unconditional rebuff, but not because we have to cling to “conservative values.” It is not “conservative values” that are at issue here, but the range of fundamental values that have been developed by human culture throughout the course of civilization. Without the standards of culture, it is impossible to move away from an economy based solely on wealth and overconsumption, and towards production focused on satisfying reasonable needs. Economic rationality has done its job, and it is time for it to leave the arena.

Humanity now faces a situation where the cost of advancing along the path of “capitalist-type” progress is constantly increasing, and may become prohibitive. V. S. Stepin, referring to data provided by Erwin Laszlo, notes that the principle “the more we consume, the better we live” leads to ecological catastrophe, and new strategies for the development of civilization should be associated with the rejection of this principle (Laszlo 2001, 70; Stepin 2015, 164).

Why is humanity, in pursuit of increased consumption, willing to jeopardize its habitat and even its own existence?

Adam Smith’s famous words are often quoted:

It is not from the benevolence of the butcher, the brewer, or the baker that we expect to get our dinner, but from their regard to their own interest. We appeal not to humanity but to their selfishness and never tell them our needs but only their benefits. (Smith 1962, 28)

This quote is usually cited as evidence of the harmony of interests achieved on the basis of market benefit. However, in an economic system where needs are met not for their own sake, but for the selfish interests of producers and sellers, the broader interest may well be compromised. Even in the early stages of capitalism, business was willing to adulterate products and cater to any whim so long as profit could be secured, and with the development of monopolistic tendencies, capital acquired an especially powerful set of tools to manipulate the consumer. This was already noted by Joseph Schumpeter:

[E]ven in the most everyday affairs, consumer behavior does not fully conform to the postulates contained in textbooks of economics. On the one hand, their desires are not so definite and their actions to fulfill their desires are not so rational and quick. On the other hand, they are so susceptible to advertising and other methods of persuasion that producers are more likely to dictate terms instead of being guided by consumers’ desires themselves. (Schumpeter 1995, 339)

A recognition of this situation is now commonplace, and guides to manipulating consumer preferences, drawing on advances in psychology and neurolinguistics, can be found on the shelves of bookstores (Dymshits 2006) and on the internet (Harris

2016). Researchers are now exploring the ability of artificial intelligence to manipulate our choices (Dezfouli, Nock, and Dayan 2020). Huge amounts of information are gathered through social media to gauge people's habitual reactions and to play on each individual's susceptibilities.

The illusion of satisfying simulative needs is replacing the development of the human personality, turning production and consumption towards the waste of natural resources. Meanwhile, the production of simulacra is quite rational in formal economic terms. Streams of spiritual bubblegum called mass culture, cosmetics that at best have a fleeting effect, and junk food products that are flavored to appeal to the consumer are transformed into evidence of effective economic development—and respond to economic interest.

The Possibility of Going beyond the Limits of Economic Rationality

There is, however, a difference between the amount of consumption and the degree to which needs are met. These values are not identical, and it is quite possible that the degree of satisfaction of needs may increase while the volume of consumption decreases. Modern technology demonstrates this quite clearly. One modern smartphone that weighs 110–120 grams (Smil 2013, 127) fulfils needs that 40 years ago would have required a telephone, radio, television, voice recorder, camcorder, VCR (video cassette recorder), camera, watch, computer, notebook, bank office, geographical maps, reference books, and more. The combined weight of all these items and devices exceeds that of a smartphone by many dozens (if not hundreds) of times. The satisfaction of needs can thus be increased while drastically reducing the material resources consumed.

Ultimately, modern platforms based on sixth-generation hybrid technologies will allow human-free production, relying on artificial intelligence and the industrial Internet of Things (Boyes et al. 2018) or even Internet of Everything (IoE), processing large amounts of data from embedded sensors, etc. As a result, the transition to smart factories and Industry 4.0 is expected. On the basis of automation, the latter is intended to transform not only the production process itself, but also the entire system of production and sales organization (GTAI [Germany Trade & Invest] 2014).

New Technologies and New Values

Technology, however, is merely putting more opportunities in people's hands. How people use these opportunities depends on the value attitudes that prevail in society.

Can these value attitudes change?

Yes, and the preconditions for such a change are also inherent in new technological opportunities that are leading to a wider range of employment in areas where the share of creative activity is growing. But how do we move to mindful consumption, to nooconsumption? This can only be ensured through the internalizing of cultural criteria.

Human cultural development, this indicates, is no less important than scientific and technological progress. Noovalues imply not only a reasonable attitude to human needs and a careful approach to the natural environment, but also a shift in the nature of relations between people towards the elimination of social conflict. The inertia of narrowly economic stereotypes in human behavior will not be overcome immediately or

automatically, even given expanded opportunities for intensive production to satisfy human needs and an increased creative content of human activity. It is thus all the more important to form an ideological platform of society based not on the principles of social Darwinism, but on the ideology of solidarism (Bodrunov 2021b; Leroux 1840; Bourgeois 1896).

As the causes of social conflict in an economic society oriented towards values of economic rationality are overcome, and as we move gradually towards non-economic criteria of production, the desire for solidarity action in the common interest and in the interest of each individual will increasingly find its way into the mainstream, and will put an end to conflict.

The preconditions for such an ideological orientation can now begin to take shape. As I have noted in the past (Bodrunov 2021b), the human individual as a social being is not merely a product of social norms and stereotypes. Each person in the process of their formation is socialized under the influence of the social environment, but at the same time they themselves influence this social environment, gradually changing the accepted social norms and ingrained values.

Nevertheless, unless people take an active position in the sphere of the development and dissemination of culture, in the spiritual and moral sphere, and unless a struggle is waged to transform the values accepted in society in the direction of non-values, we risk falling into the gap between the new opportunities created by technology and the unreasonable use of these opportunities. A proactive stance here will make it possible to realize the true values that can keep human beings from following the path to self-destruction, whether through mutual extermination by means of weapons of mass destruction, through the destruction of our natural environment, or through the kind of interference in our own nature that would destroy the humanity in us. The issue here is not only of physical or biological interference, but also of spiritual interference—from manipulation of consciousness to replacing the true values of human culture with the rejection of all values (which actually makes economic interest the only measure of all values).

It is no coincidence that the adjective “true” is used here. The choice of this word is not intended merely to emphasize the significance the author attaches to the values on whose importance he insists. No, we are talking about truth precisely in the philosophical sense of the word, and thus about values that meet the philosophical criterion of truth. The discussion is not about some universal, unchanging, timeless, true values. “If truth is abstract, it is not truth” (Hegel 1993, 88).

True values are gaining prominence now, when the material conditions for this are in place, when values of a narrowly economic nature are losing their importance, and when it is becoming both necessary and possible to preserve and affirm the human aspect of humanity.

Note

1. The term technogenesis was introduced by Academician Fersman (1934, 27). See also Balandin (1978).

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