



A New Scientific Paradigm as a key to Building a Community with a Common Future for Humanity

Valentina M. Bondarenko

Academician of RANS, IfRA and IGRA, RAS Institute of Economics, Russia

*We should not discard our dreams,
because the surrounding reality is too complex;
We should not stop following our ideals,
because they appear to us as unfeasible.*

– Xi Jinping

Abstract

The major idea of this article is that for a scientifically based understanding of possible future for humanity we need a new knowledge of regularities for its development. The currently existing scattered knowledge is not sufficient for understanding fully and precisely as to where humanity is heading towards and whether it is possible to build a community with a shared future. Therefore, as shown herein, the concept for building such community can only be developed by means of the new scientific paradigm being shaped as substantiated by the author. The new knowledge implies the need to consider all processes and phenomena through the single objectively set goal for the human-system development, and to do this integrally, comprehensively, systemically, and on the basis of cross-disciplinary unification of all sciences and spiritual knowledge into the single trans-disciplinary knowledge with a single index and single criterion for efficiency. The possibility for the actual appearance on our planet of the community with a shared destiny for mankind, outlined first conceptually by the PRC Chairman Xi Jinping during his visit to Moscow in March 2013, as well as the mechanism for its realization, can only be understood when the paths to its construction are considered not only for the entire global world, but also for each individual country and each specific human individual.

The need of studies for resolution of the avalanche-like growing problems is becoming ever more acute not only in Russia but also in all countries of the globe. This is especially important as the socio-economic situation continues to deteriorate, economic growth-rates are reducing in all countries, wealth gap is growing concomitantly with the growing tensions in different regions of the world, and security threats are caused by proliferating terrorism, cybercrime, and climate changes. On the other hand, the worsening economic, social and political situation in the world means that the scientific knowledge, which we possess and have started to apply since long ago, does not produce the desired result and does not resolve any of the existing problems. Hence, there is the long-existing need to develop and apply

a new scientific paradigm as the necessary basement for accelerated productive resolution of centuries-long problems and for the development of uniform development strategy for Russia, China, and the entire global world.

“The existing economic theories and scientific knowledge at large fail to reveal the objective causes of crises, risks and all other negative phenomena, and to offer to the global world the uniform development strategy and effective mechanisms for its realization.”

That resolution of this task is timely and seeds no doubts. As early as the first half of the 20th century, Arnold Toynbee wrote on the need to move from narrow disciplinary studies to cross-disciplinary ones,¹ while in 1975, Thomas Kuhn published his book in which he substantiated the inevitable change of scientific paradigms—or, scientific revolutions.² In his view, the new scientific paradigm should be seen not as current theory, but rather as a whole worldview, in which it will exist together with all conclusions, drawn owing to its appearance.

Let us make the above discussion clearer by Russia’s case in point.

In the Russian academic community, everybody is familiar with publications by a scholar from the RAS Institute of World Economy and International Relations (IWEIR RAS), Professor and Dr. of Economics Vladimir Pantin. In 2019, he published an article entitled “Russia Should Get Prepared for War”,³ in which he wrote that it is highly (by some 90%) probable that the forthcoming years would witness a local war in which Russia would be constrained to defend its national interests and the very right to independent existence. He substantiated his conclusions by means of N. D. Kondratiev’s cycles-and-crises theory, developed by the great scholar of the early 20th century. Basing on extrapolation of Kondratiev’s studies to the current situation in Russia and the world, and having supplemented it by empirical analysis of the current events and trends, Pantin draws the conclusion that Russia needs to prepare for a war.

Pantin substantiates the central idea in his article by saying: “Basing on the analysis of Kondratiev’s cycles..., and on empirical analysis...—that is, the crisis of scientific knowledge on the economic reality and the lacking objective understanding of the human-system developmental regularities have pushed the global world to select the deadlock or, more precisely, catastrophic path of development.”

For the time being, none of the economic theories, representing the third general scientific paradigm, helped to evade the economic-science crisis and hence all of them have failed to provide an effective prescription for evading the human-system development crisis.

Another case in point: Today, in Russia, under the Federal Law “On Strategic Planning”, at least 23, 200 different-level strategies are being elaborated in the hope of their realization.⁴

Actually, the number of such strategies is much higher than the quoted figure, as such strategies are being developed within 12 national projects, plus with sub-projects, etc.

Each of these strategies has its goal, indices and criteria for project assessment. At the meeting of May 8, 2019, chaired by the RF President, participants mentioned another 15 indices showing fulfillment or non-fulfillment of national projects. Meanwhile, as demonstrated by the practice, only 25% of measures, listed in the “road maps”, cause direct influence on attainment of the national goals, while the rest were borrowed from former national projects, which, as known, have not produced any “breakthrough”.

Another example is found in world practice. As assumed, the 17 Sustainable Development Goals adopted by the UN in 2015 form the image of the future world, but they too have 169 tasks and 338 global indices, multiplied by regional- and national-level indices, and the target year for their attainment is 2030.

Therefore, there are grounds to assert that none of the aforementioned strategies approved in Russia, and none of the Sustainable Development Goals adopted in the UN, would be realized, because realization thereof runs counter to the systemic, integral, and comprehensive perception of development.

Multiple development strategies in different forms and with other contents have been adopted not only in the 10 most powerful countries of the world, but in other ones as well.

That is, we see that the existing economic theories and scientific knowledge at large fail to reveal the objective causes of crises, risks and all other negative phenomena, and to offer to the global world the uniform development strategy and effective mechanisms for its realization.

Until now, economic knowledge is based on collection and processing of empirical data from the past and subjective judgments on realization and prolongation thereof with big admissions and uncertainties for the future. This results in big mistakes in cognizing the real picture of the world. And, nobody sees a possibility to substantiate clearly and specifically the outline of the future for Russia and the entire global world.

All this means that the subject of searching for a new scientific paradigm is very timely and demanded as never before. Toynbee and Kuhn said the same things decades ago. The theory of paradigms and science revolutions is presented most saliently in the aforementioned work by Thomas Kuhn. In the light of this theory, even the fourth general-scientific paradigm is the theory of self-organization and synergy, which does not offer research methods for relevant description of economic reality.

Hence, it becomes ever more timely to substantiate a new scientific paradigm, which would help to resolve all these problems.

At this point, we should note that in the late 1960s, the Club of Rome, established by the initiative of Italian economist Aurelio Peccei, put forward the program of global problems studies and set its task to offer such methodology that would enable the society to analyze reliably all “difficulties of mankind”. So far, the Club of Rome members have not devised

such methodology. Since 1968, the Club of Rome issued over 40 reports in total. The authors of its report, entitled “Come On!” published in late 2017, are Ernst Ulrich von Weizsäcker and Anders Wijkman, who actually demand to change the whole contemporary mode of production and consumption, but do not specify the goal of such measure and the way to realize it. Therefore, it becomes clear that the precise selection of the path to forming a new scientific paradigm requires the relevant methodological toolkit.

After many years of empirical, politico-economic and world-vision studies, the author of this article could devise such a toolkit, which enabled her to set and resolve the four tasks.

The **first** task, set by the author, was to try to define the goal of human presence on Earth. The **second** one was to find, if it would be possible to unify, the integral, comprehensive, systemic and cross-disciplinarian approaches to development into a single approach. The **third** task was to find the uniform index, owing to which the picture of the world and development paths would become absolutely transparent, while the **fourth** task was to find the only possible criteria of efficiency in development of the human system and any of its sub-systems.

As shown by resolution of the first task, the human presence on Earth is not incidental. The only possible and objectively set goal and mission of mankind and a human-being is to reach the Supreme Reason in the course of his/her development, as he/she understands the need to do everything in order to satisfy the supreme need of any specific human being to become physically, intellectually and spiritually perfect, and to reach a high level of consciousness. Otherwise, crises would grow through to the apocalypse and self-destruction

Resolution of the second task—to unify the integral, comprehensiveness, systemic and cross-disciplinarian approaches—turned out to be feasible, if these approaches are applied together for resolution of the first task to define the path to attaining the objectively set goal of development of mankind. In this case, the actual cross-disciplinarian or, more precisely, trans-disciplinarian factor will be provided, when in relation to the goal and the path (strategy) for its realization it becomes necessary to combine actually all sciences and spiritual knowledge. That is, it became clear that the real result will be obtained if all these approaches are unified for realization of the objectively set goal of development of mankind.

It should be noted here that quite a few attempts have been made already to combine achievements of science with spiritual knowledge. Most often, such tries are made by physicists facing some actual phenomena, which cannot be explained by means of the knowledge available in physics, or by its laws. Scientific and spiritual knowledge used to be combined in China since ancient times, and the best known examples are served by Lao Zi’s and Confucius’ teachings.

Thus, the new vision of the integrity, comprehensiveness, systemic nature and trans-disciplinarian approach (unification of all sciences and spiritual knowledge) as the only possible and necessary condition on the road to resolution of all problems for attaining the objectively set goal of development of humankind may be quite reasonably regarded as the beginning of the formation of the new scientific paradigm!

Why so?

Because, resolution of the second task enabled us to understand how to remove chaos, complexity and uncertainty from understanding all aspects of the development of mankind, and to minimize, in time and space, the search of resolutions for elimination of all problems. However, many academics believe that chaos, complexity and uncertainty are natural conditions for development, and even devise the new fields of knowledge—for instance, synergetics, the science of complexity, and establish the corresponding think-tanks, such as the Institute of Synergetics in Santa Fe, US. In our view, appearance of complexity in development means moving to the goal by the “trial and error” method. It becomes possible to remove complexity and chaos from understanding development only by applying the unified integral, comprehensive and systemic approaches together with transdisciplinary knowledge—but only in relation to the identified objectively set goal of human presence on Earth.

Until now, the cross-disciplinary study was understood as a resolution of tasks for one discipline by methods of the other one, or as the aggregate of simultaneous resolutions of separate aspects laid in systemically unconnected socio-economic, financial, demographic, ecology-and-climatic, and other tasks and processes by methods of narrow scientific disciplines. The result is well-known: the crisis in human-system development is growing.

Finding the index, which would help us measure and juxtapose all processes and phenomena that cannot be measured and juxtaposed by means of other indices, became the condition for resolution of the third task. The latter had to be resolved so that all these measurements would be directed to understanding of all aspects of the development of mankind in relation to the objectively set goal. The only index, which satisfied such conditions, happened to be the time!

After resolution of the first three tasks, the fourth task—to identify a single criterion of efficiency in the human-system development—was resolved automatically. We understood that such efficiency criterion for the whole human system or any of its subsystems, and each specific human individual is the “time between” the attainment of the objectively set goal and the reality in which they are present at the given moment. Should the “time between” reduce and approach zero irreversibly (i.e., without crises), Russia, or any other country, or the whole world in their development objectively and synchronously, would come closer to the goal attainment. It appears that with the reducing “time between”, each state, community, business, and each human individual starts to fully understand the goal as well as the need of its setting and attainment.

As shown by our studies, if the “time between” grows for all actors but at different rates, this means that the whole community, all its parts, and all people who find themselves in different spaces of “time between”, have different levels of consciousness, different interests, and it will be ever harder for them to agree with one another. Such situation will be followed inevitably by the conflict growth through to the war, however it might be manifested—whether overtly (military conflicts with the use of deadly weapons), or covertly (informational war, use of climate and biological weapons, or something else).

Today the world is at the peak of such relations, and these conditions seem to leave no chance to provide general and economic security for Russia and the world. In this context, Pantin's warning that in the nearest future a local war can start in Russia may happen to be correct.

Therefore, it is most important to have the "time between" equal for all countries and residents thereof and reducing simultaneously for all through to zero. Hence, a uniform strategy is needed to provide for such synchronous and swift (both in time and space) development of the entire global world and construction of the common future community. All fundamental bases are already available for development and realization of such a strategy. Resolution of all four tasks in aggregate helped not only to obtain the new methodological toolkit and to substantiate the new scientific paradigm on this basis, but also to have a chance to devise the development strategy for the whole globe and humanity, plus the mechanism for its practical realization. That such possibility is already available is confirmed by the results obtained earlier with application of the new methodological toolkit. For instance, as of today, the author has managed to:

1. Formulate the new paradigm for forecasting future from the future—i.e., the future in which the objectively set goal is attained and the "time between" is approaching to zero. All human and societal needs are realized at the level and by means of the thought. That is, the future would be forecasted from the time, when a human being has become perfect and reached the Supreme Reason. After return from that zero time to today, it becomes possible to select and realize only those projects and solutions which contribute to reduction of "time between", and hence the attainment of goals shall be accelerated while consumption of all resources shall reduce.⁵
2. Identify human-community development regularities, find out the nature of the systemic-crisis, and understand that there are only two development paradigms on Earth: one, featured by crises, and the other one offering the opportunity to create all conditions for transition to a crisis-free development. This will become possible only with development and realization of the uniform development strategy for Russia and the entire world.⁶
3. Devise the mechanism for the realization of uniform development strategy for Russia and the whole world. Such a mechanism shall become available, if, in the circumstances of rapid introduction of Industry 4.0 digital technologies, all national economies would develop through coordination of state, business, and societal interests with interests of each concrete human individual, and if such mechanism for coordination of most diverse interests would be realized:
 - in the real-time regime;
 - by managing development through the management of the "time-between";
 - at each local level of any country in the self-governance regime;
 - in realization—for instance, by means of additive technologies—of personalized production under the consumers' order, excluding manufacture of non-demanded products and preserving all natural resources in the primeval condition.⁷

The aforementioned points prove that we obtain basic conditions for resolution of all problems, development of a uniform development strategy, and actual realization of Chairman Xi Jinping's proposals on building the shared-future community on our planet. The basic conditions listed have already passed through several probations in the author's multiple articles published by review journals in Russia and abroad, in presentations at important international congresses, forums, symposia and conferences, and are supported by Diploma on Discovery in Social Sciences (No. 43, issued on 26.12.2016).

“Development shall take place not by “trial-and-error” method, but rather by a conscious understanding of the final goal and the interests of each human individual living on Earth.”

Today, however, under such conditions, when the former scientific paradigm for understanding development problems is being used together with Industry 4.0 technological revolution and swift introduction of thereby created digital appliances, artificial brain, Internet of things, bio-, neuro-, and other technologies of the 21st century, Russia and all other countries may undergo the two transformations of the existing socio-economic model for human-system development. In the new models, relations among the state (government), society, business and concrete human individual will differ depending on the selected development goal.

In the first possible future model, the society (unintentionally) and a small group of persons (intentionally) shall select different development goals, which shall be differently directed, and development shall proceed through the “trial-and-error” method. In this case, the future appears uncertain, its attainment will be stretched in time, while accelerated application of digital, biological, and other technologies will generate big human and resource losses and may result in apocalypse. That is, the moment of reaching singularity as a point of no return in attaining different development goals and the transition to the new socio-economic model of the common-future community may never come.

The second possible transformation of the existing model shall be featured by development proceeding in conditions of the currently existing paradigm, in the interests of a narrow group of persons and thereby adopted goals and values. In such a model, we see, as a trend, the appearance of technological singularity, the core of which includes artificial brain, plus digital, biological, and other technologies for manipulating and governing human consciousness and the human life at large. In such a model, the final target is to gain control over the whole world and each human individual in order to receive maximum profits. Risks for states, the entire global community, and a human individual shall grow. Transition to the new socio-economic development model and to building the common-future community shall become impossible, as the given path shall increase the probability for appearance of such phenomena as, for example, the emerging global pandemics generated by proliferation of deadly epidemics, or such phenomena as the Islamic State ideology as thereby formed

values are so attractive for many, and, especially, young people, and exactly therefore today the digital revolution and other high technologies of the 21st century, apart from positive facets, bear grand threats through to the threat to the existence of mankind.

However, if uniform strategy is devised and realized by means of the new fundamental scientific paradigm, then development will be directed consciously, with understanding of the final goal, and proceed in the interests of each human individual, living in Russia, China, and all other countries of the globe, and their interests will be coordinated in real-time regime at each local level of any country in the world. Thus, all the conditions will be formed for transformation of the existing socio-economic model into the ***third development model of community with common future for humanity***. Its orientation to diverse interests of each human individual will make it possible to apply digital technologies for production under his/her order; not to manufacture any redundant products; to preserve natural and human resources in primeval condition, and to offer more of free time for his/her own perfection. All this will be the only possible condition, which can motivate each and, especially, young human person to provide, in terms of time and space, for sustainable development of the entire planet in relation to the goal, and for accelerated construction of the common-future community. Exactly in this case, technological (digital) singularity shall be synchronized with singularity in forming new human relations and human understanding of the need to bring closer, evolutionarily and irreversibly, attainment of the global development goal.

Today, the world finds itself between the first and second models. However, rapid introduction of different technologies, digital appliances, artificial brain, bio-, neuro-, and other technologies of the 21st century, together with aggravating international relations, migration processes, sanctions, trade and diplomatic wars, plus other negative developments around Russia, between the US and China, US and Europe, etc., rapidly bring the world to the second development model, in which the final goal is to control the whole world and each human person. The consequences are described above. Risks will grow, while states may disappear.

Therefore, it becomes critically important that states and their no.1 leaders, for preservation of themselves and their nations, for the sake of general security and for transition into comprehensive, joint sustainable development and actual construction of the common-future community attend, first and foremost, to accelerated resolution of the task to form the third development model and the uniform strategy for their attainment in the universally understood and accepted future.

Such transformation of the existing socio-economic model into the third development model becomes possible only in the presence of new fundamental knowledge of the future and by means of digital plus other high modern technologies. Such relevance of the new production relations and new production forces provides attainment of the global goal for every human to become highly conscious and physically, spiritually, and intellectually perfect, and thus to reach the Supreme Reason. This will be feasible only with the construction of the common-future community by means of minimal resources, reduced work hours, and more free time for his/her own perfection.

Conclusion

Development and the application of the new methodological toolkit, plus the already obtained results serve the ground to assert that it took time for the formation of the new scientific paradigm and new knowledge on the human-system development regularities. Such knowledge would help to devise a uniform development strategy and serve as the basis for building the common-future community, provided that development shall be targeted at each **human individual**. Thus, development shall take place not by “trial-and-error” method, but rather by a conscious **understanding of the final goal and the interests of each human individual living on Earth**.

Indeed, the world will improve, when it is built as open, clean, harmonious, beautiful, and safe for everybody and for each human, and when it encompasses all spheres of human life. Certainly, such a world cannot be built overnight. But to lay a solid foundation is the duty of the current generation of scholars/scientists, policy-makers, and all people. Otherwise, the apocalypse is inescapable, and mankind will cease to exist.

Acknowledgment: *The given study has been funded by the Russian Fund for Fundamental Research under research Project No. 19-010-00809.*

Author contact information:

Email: bondarenko@ikf2011.ru

Notes

1. Arnold J. Toynbee, *Study of History*, Vols. I–X, 1934–1954.
2. Thomas Kuhn, *Struktura nauchnykh revolyutsii* [Structure of Scientific Revolutions]. Translated from English by I. Z. Naletov. Moscow, 1975.
3. Vladimir Pantin, *Rossii nado gotovit'sya k voine*. [Russia Should Get Prepared for War]. REGNUM IA, April 5, 2019 <https://regnum.ru/news/2606320.html>
4. FZ “O strategicheskoy planirovaniy v Rossiiskoi Federatsiyi” [Federal Law “On Strategic Planning in the Russian Federation”], No. 172-ФЗ of 28.06.2014 [E-resource] URL: <http://www.kremlin.ru/acts/bank/38630> (addressed on 24.07.2019)
5. Bondarenko V. M., “Tsifrovaya ekonomika: videniye iz buduschego. [Digital Economy: Vision from the Future],” *Tsyfrovaya ekonomika*, 9, No 1/5 (2019): 36–42.
6. Bondarenko V., “Transition to Crisis-Free Development: A Myth or Reality?,” *World Futures*. 70, No2 (2014): 93–119.
7. Valentina M. Bondarenko, Ilya V. Ilyin and Andrey V. Korotayev, “Transition to a New Global Paradigm of Development and the Role of the United Nations in This Process,” *World Futures*, 2017.