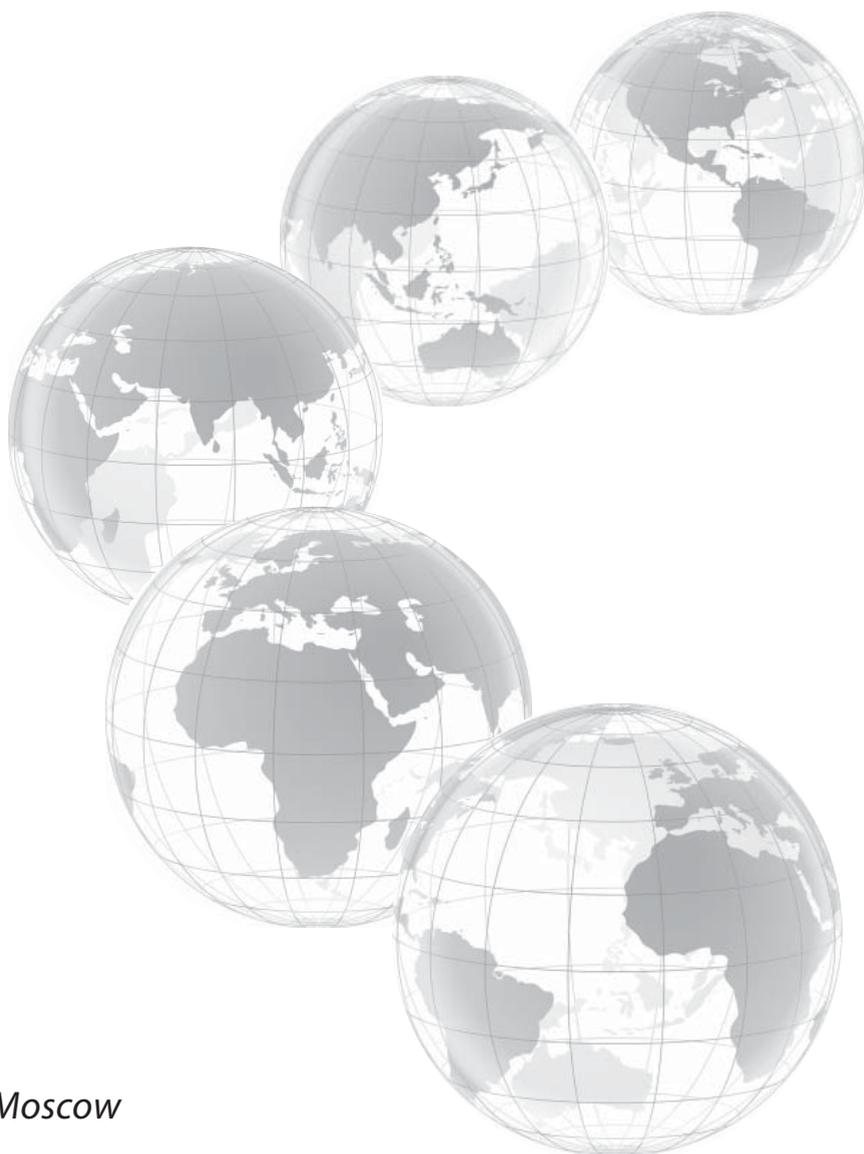


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The Castle with Ghosts

Opening Remarks of the Editor-in-Chief

"Shopkeepers do revolutions by hands of Romantics," — says one of the characters of Dostoevsky, who prophetically revealed the depths of the human psyche and the social pathologies that can lead and have led to tremendous upheavals of the twentieth century.

Triumph of the ideas does not end with their revelation. Not least because that there is a distance between idea and reality. It is filled with errancy of mind and excesses of performance. And revelations, like the ideas are not universally widespread. Errancies are abundantly fed by unconsciousness and banal ignorance. Strictly speaking — errancies are kind of lies, untruth. Especially shocking is the ignorance that is created through directed efforts.

The works of Pitirim Sorokin have not been known to almost anyone in his homeland for 70 years. Like the works of his friend — Nikolai Kondratieff — 60 years. Two generations have been deprived of the opportunity to reduce the degree of ignorance in the major humanities — sociology and economics. Also, little was known about their lives. One — in immigration, the other — in prison, especially in the last of the many deprivations of liberty, generously fell to the share of both. Meanwhile, the very lives of the great scientists are also the text worth of study not less than the scientific papers.

Suffice it to mention that Pitirim Sorokin, being, among other things, an expert in criminal law, researched into the most important for his and our time problems and catastrophes, as crime and punishment, feats and rewards, hunger, sociology of Dostoevsky and Tolstoy, power and rulers, revolution, morals, the crises of our time, especially — “life in death”, as he called the epoch after the revolution of 1917. In life, Pitirim Sorokin was a genuine passionary. Partly this was largely dictated by the fundamental conflict between two buildings and their inhabitants on different banks of the Neva — University and the Winter Palace. As far as in 1910 Sorokin saw that in this struggle the palace would be defeated.

Exploring reality, P.A. Sorokin dealt with facts not illusions, produced real knowledge about the real man and society, so that to build scientific structures that survived him and extremely valuable this day.

When the works of the scientist returned to his homeland, got out of restricted-access collection, the truth opened. Terrible truth. So at least, that we are able to compare our reality and that he like his beloved Dostoevsky, saw and understood then what and when much still barely began. In fact, the reality of the twentieth century has generated not only a “catacomb church”, but also a “catacomb science.” It is formed powerful scientific knowledge that is ousted by officialdom, not only, by the way, Soviet, to the under-

ground. Partly it was created here, partly abroad. Literature has a similar fate.

As a result, in this century, we have found out ourselves in the haunted castle. Not unread books of Pitirim Sorokin — ghosts. Not yet undigested lessons of Nikolai Kondratieff — ghosts. This number of names can easily be extended. Ghosts — these are known unknowns, the phenomena that they had already understood and left their understanding as our legacy! A legacy is not perceived. By many who should — by vocation — know their achievements of mind and feats of life.

When we, with Professor Yuri Yakovets, a few years ago visited the Department of Sociology at Harvard University, which was founded by Pitirim Sorokin, we found little traces of the great sociologist in the actual memory of professors and students of the department. Meaning that was comprehended by him and left as a legacy to the descendants — requires effort. Not to discover America, first; and get ready to understand the “skeletons in the closet” of modern humanity, second.

A.I. Ageev, Editor-in-Chief For
“The Partnership of Civilizations”
Journal, Professor, RANS Academician



The Torch of Knowledge in the Darkness of the Transitional Epoch

In the transitional period of a super-long civilizational cycles change it is observed surprising twists of history. Revolution alternate with counter-revolutions, we have a new round of confrontation between civilizations and leading powers. The future plunges into the abyss of ignorance. Despair and anger have overtaken the leaders of the new generation, and it is difficult to predict what will be the result of their righteous anger. This is evidenced by the effects of the “Arab Spring” and civilizational crisis in Ukraine in 2014, which acquired the global features. The world socio-economic science is unable to properly assess their unintended consequences, or come up with clear ideals of future society and the strategy towards it.

However, there is a torch of knowledge in this darkness of ignorance, in which the planet has plunged. This is the legacy of one of the few geniuses of science of the 20th century Pitirim Sorokin, whose 125th birth anniversary is celebrated this year. It has been 95 years since the publication of his textbook on the elementary

theory of law, where he first presented his vision of the system of historical laws [1]; 90 years since his writing of the Russian version of the monograph “Social Revolution”, first published in Russian in 2005; 75 years since the publication of the first volume of his encyclopedic work “Social and Cultural Dynamics”; 50 years since the publication of his final work “Basic Trends of Our Times,” where it is stated in the literary and figurative form the ideas of his teaching — integralism.

Finally, 15 years ago, in February 1999, it was established the Pitirim Sorokin — Nikolai Kondratieff International Institute that received and develops the scientific legacy of Pitirim Sorokin in a new historical epoch.

Using this bouquet of anniversaries, let us try to understand the main ideas of Pitirim Sorokin to find the ways to overcome today’s flurry of global crises.

Laws and Zigzags of History

Pitirim Sorokin got actively involved in the formation of the Russian school of sociology (the foundations of which were laid by his teacher and friend M.M. Kovalevsky) and soon he became one of its leaders. He founded the first in Russia department of sociology at the University of Petrograd. In the U.S., Sorokin established and headed for many years the Department of Sociology, became a recognized leader of sociological thought in the U.S. and the world. However, in recent decades his doctrine is well forgotten in the West, because it does not fit into the Procrustean bed of modern liberal canons of scientific thought. While in Russia, before the 1990s, it was terra

incognita to the public, remaining under the ideological ban.

The subject and purpose of sociology is to discover the laws of functioning and development of society. No wonder that Pitirim Sorokin included a chapter about historical laws, which is published below, to the textbook appeared in 1919 on the elementary theory of law in the light of the doctrine of state.

I would like to point out one crucial, in my opinion, idea that sheds light on the twists of historical process sometime occurring zigzags of the historical process. Assessing the direction of this process, Pitirim Sorokin denies understanding of history as regress or as an eternally recurring cycle. He comes from the ideas about the historical ongoing process of mankind and characterizes the system of historical laws that expresses it.

But at the same time, the scientist examines the process not as an upward movement by a straight line, but allowing zigzags along the way. These zigzags have not been once observed in the history in a civilizational cycles change — for example, in Europe at the sunset of the ancient civilization and in the epoch of the evolution of the Middle Ages, when it was lost a significant part of the ancient heritage. Another closer example — is plunging into fascism of the most of Europe after the crisis of 1929–1933, beginning of the decline of the industrial civilization and sensate socio-cultural system.

The most recent example — the Ukrainian crisis of 2014, the peculiar historical paradox. The western civilizations have proclaimed their credo the anathematization of fascism suddenly begin to actually support the pro-fascist elements during the coup and suppression of federalism in

Ukraine, turning a blind eye to the consequences of such policy. What is happening in Ukraine, much like the historic zigzag — and the rise to power of fascism in Germany.

However, later, in examining the history of civilizations in the “Social and Cultural Dynamics” and recognizing the existence of super-long historical cycles, Pitirim Sorokin put forward the idea of aimless fluctuations, without a vector of progress. However, this idea is at odds with his own views, as reflected in many of his writings and in the final monograph “The Basic Trends of Our Times.”

Changing historical epochs in the first half of the 21st century causes a sharp intensification of the struggle of social forces — progressive, conservative, reactionary that is fraught with historical zigzags if reactionary forces manage to take over for a while. But these zigzags are short-lived, because the historical laws of progress, sooner or later will find their way.

Sociology of Revolution

The course of history is uneven. The movement is periodically interrupted by the revolutionary leaps, transition of sociopolitical systems (states, civilizations) to a qualitatively new state in changing civilizational cycles and their phases. Such change is often accompanied by a wave of violence, wars, destruction, although it is not a prerequisite for a qualitative leap in the development of society, its movement by the spiral of history. Many politicians identify social revolutions with political, with “rebellion senseless and ruthless”, and insist that the time of revolutions is

passed, their historical limit is exhausted. This is spoken about exactly in time during the unfolding of global civilization revolution and a wave of political revolutions.

Section “Revolutions in Civilizational Dynamics” of the monograph of B.N. Kuzyk and Yu.V.Yakovets “Civilizations: Theory, History, Dialogue and the Future”, Volume 1, published in 2006 in Russian and English languages, states the ideas of Pitirim Sorokin about revolution, including the assessment of the 1917 Russian Revolution.

The first clang of the alarm-bell of modern civilizational revolution sounded nearly a century ago in Russia.

Pitirim Sorokin, an active participant in the February 1917 revolution and fighter against the October Revolution, thirty years after it, recognizing the giant success of the Russian Revolution and its colossal defeat, noted its historical character: “The Russian Revolution was not just political, or economic, or religious; it was both political and economic, religious, and family, and educational and scientific, and artistic, and philosophical. It tried to revolutionize all the major social institutions — from family to business and government; all the elements of culture — from science and philosophy to religion, poetry and music; and the whole mentality, and behavior of the individual itself from cradle to grave. In this sense, perhaps, it was the most boundless revolution in the history of mankind.... Its success — an unprecedented worldwide spread. Even if it were limited to Russia only, its scope would not have parallels in human history. Despite all “cordon sanitary”, it has spread throughout the world.”¹

In other words, it was the first call of the *civilizational* revolution announced to the world an era of the sunset of the industrial civilization and the beginning of the search for a better society. Although in seventy years the ideals of the revolution in the country of its origin were rejected, but a hundred years later, the movement started by this revolution continues, the collapse of industrial civilization and establishment of integral civilization is close to completion.

I should add that it was not about the February Revolution of 1917, which was one of the many belated bourgeois-democratic revolutions in Europe, and specifically about the October Revolution that is constantly criticized by many now, but which, nevertheless, remains great, as it ushered an era of a new historical period worldwide, became a symbol of a change of civilizational cycles. And in this it is similar to no less bloody and destructive the French Revolution at the end of the 18th century, the significance of which no one would take a risk to deny either in France or worldwide.

Let add the following to this publication.

First, the recent years have confirmed the findings that in the 21st century, mankind has entered a period of the great civilizational revolution, a profound transformation of the world, local and global civilizations, and all components of the genotype of civilizations. This period will take several decades, probably until the mid-century and will finish with becoming integral, humanistic noospheric civilization in the vanguard countries, the fifth generation of local civilizations and the transition to the third historical super-cycle in the dynamics of the global

civilization (unless on the way the humanity will suffer in the global catastrophe in one form or another).

Second, currently it grows instability and randomness in the historical development, the number of political revolutions and counterrevolutions, forward and backward movements that sometimes fancifully combine. So it was in Egypt. So it was in early 2014 in Kiev, where at one and the same Maidan merged revolutionary masses against the corrupted ruling elite and counter-revolutionaries — pro-fascist elements — the heirs of Bandera.

Third, in the process of civilizational crisis and revolutions it is going the division of forces, a new geo-civilizational divide emerges. This is based on confrontation of the group of countries, civilizations and social forces which are the bulwark of the leaving industrial civilization, led by the U.S., EU and Japan, and the group of countries and civilizations that begin the establishment of the integral civilization, led by China, India, Russia, and Brazil. This division and confrontation will determine the course and outcome of civilizational revolution in all their diversity of specific manifestations and zigzags in the countries and civilizations.

Fourth, the driving mass force of social and the more so political revolution is the new generation. In the modern context — this is the generation of the 2020s whose leaders will determine the outcome of civilizational revolution in the next three decades. The new generation to the greatest extent suffers from the crisis, and its leaders are set quite revolutionary. However, they have a poor educational preparation, most of them do not understand the nature and consequences of the ongo-

ing transformations, and mostly conservative and even reactionary forces often use the fruits of their righteous anger and revolutionary actions. But these leaders will overcome crises and, ultimately, will carry civilizational revolution of the 21st century, although its effects may be different than it seems now. Then it will again come a relatively long period of evolutionary development.

The Establishment of Integral Civilization

The third element of the scientific heritage of Pitirim Sorokin, on which I would like to dwell on — it is his teaching about the establishment of the integral socio-cultural system. It is most clearly formulated in a relatively small but extremely filled monograph “Basic Trends of Our Times,” the fiftieth anniversary since the publication of which we celebrate in 2014. What is the import of his forecast?

First, Pitirim Sorokin substantiated the doctrine of the socio-cultural system, which he understood broadly (including not only the spiritual component, but also economic and political), and its three types (sensate, ideational — super-sensate and integral combining the advantages of the first and second); they periodically replace each other in different historical epochs.

Second, he showed that the sensate, socio-cultural system that prevailed in the West for five centuries, is at the stage of crisis, it will be replaced by an integral socio-cultural system.

Third, Pitirim Sorokin formulated a principled approach to the content of the integral system: it will not be either capitalist or communist, and will combine the best features of each, and will be based

on the principle of the unity of Truth (science), Good (ethics), and Beauty (high culture). And it will have its own characteristics in the West and East.

Of course, this is only a schematic diagram, vector of historical movement. But now this vector becomes a reality and is being filled with specific content.

Relevancy of Pitirim Sorokin Ideas in the 21st Century

After the death of Pitirim Sorokin many scientists in the West thought that his teachings — the great utopia, which is not destined to become a reality. But in the 1990s such assessment began to change.

This was encouraged by the spread of civilizational crisis, especially in Russia, which found itself in its focus.

In 1992, it was published a collection of writings of Pitirim Sorokin “Man. Civilization. Society”, then there were translated and published his major works. A number of international scientific conferences and symposia on his legacy were held. In 1999, there were established the Pitirim Sorokin — Nikolai Kondratieff International Institute, who, based on the ideas of these scientists and developing them, have formed schools of thought: civilizational, Russian cyclicism, integral macro-forecasting that take the leading positions in the global socio-economic thought.

What are the main lines in the development of the heritage of Pitirim Sorokin by the Russian civilizational school?

1. There are formed the foundations of a new branch of knowledge, the science of civilizations (civiliography) — theory, history, future, dialogue and partnership of civilizations. There are identified three

classes of civilizations — world, local, global. It is determined the structure of the civilizational genotype (civilizational code). It put forward a new periodization of the history of civilizations, including two historic super-cycles, six world civilizations (Neolithic, early class, ancient, medieval, early industrial, industrial), four generations of local civilizations. It is validated the law of compression of historical time, shortening the duration of life cycles of all kinds of civilizations.

2. It is revealed the content of modern civilizational crisis caused by the change of civilizational cycles: the sunset of the industrial and evolvement of integral, humanistically noospheric civilization; a change of the fourth generation of local civilizations by the fifth — more differentiated and active basis; a transition from the second historical super-cycle to the third in the dynamics of the global civilization. There are identified the main outlines of the integral, humanistically noospheric world civilization, the lines of transformation of main components of its genotype: a new model of demographic dynamics, the evolvement of the noospheric energy-ecological mode of production and consumption, integral technological mode of production, economic and socio-cultural system, a multi-polar world based on dialogue and partnership of civilizations. It is elaborated a global forecast of dynamics and transformation of civilizations for 2050, which was reported and found recognition at the UN headquarters. In preparing the forecast there were applied the multi-polar geocivilizational model and strategic matrix.

3. Based on this new knowledge it is substantiated a long-term strategy for global sustainable development based on

partnership of civilizations (which was presented at the UN headquarters UN and the UN Conference on Sustainable Development RIO+20), the strategy to overcome the civilizational crisis and take the path of global sustainable development, draft of the UNESCO World Declaration on the strategy of dialogue and partnership of civilizations in science, education and culture. Although the vision of scientists has not yet received wide support from international organizations, gradually it acquires recognition and contributes to solving strategic issues of civilizational revolution of the 21st century.

4. There are being shaped institutions and mechanisms of formation and spread of a new paradigm of social sciences, which central link is integralism of Pitirim Sorokin. In 1996, there were set up the RANS Cycle Studies and Forecasting Department. In 1999 — the Pitirim Sorokin — Nikolai Kondratieff International Institute. In 2013 — the Open University for Dialogue among Civilizations. From 2006, it is launched “New Paradigm” internet portal which includes more than 20 sites. From 2012, jointly with the Institute for Economic Strategies it is published international scientific and educational journal “Partnership of Civilizations” (in Russian and English languages). There are published many monographs. Civilizational forums are held on a regular basis as well as international scientific conferences and symposia, interdisciplinary discussions. One can say that it is established a modern scientific and educational infrastructure for the development and dissemination of ideas of Pitirim Sorokin, Nikolai Kondratieff and other scientists who laid the foundations for a new paradigm of social sciences.

I mentioned only three elements of immense scientific heritage of one of the geniuses of science of the 20th century. In fact, this legacy is very multifaceted and characterized by a wealth of ideas, findings, insights that should be familiar to anyone who considers himself an intellectual. And especially to the leaders of the new generation who have a gigantic work ahead for the realignment of civilizations on new, more reasonable and fair bases.

Thus, the scientific heritage of Pitirim Sorokin is sought-after in the 21st century, makes the nucleus of the new paradigm of science about society, being one of the links of the scientific revolution of the 21st century. His teaching becomes a torch,

lighting the way to the future in the darkness of chaos of civilization crisis, transitional period to an integral civilization.



Yu.V. Yakovets,
Dr. Economics, Professor, RANS
Academician President of the
Pitirim Sorokin — Nikolai Kon-
dratieff International Institute

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1. *Pitirim Sorokin. The Facets of Life and Creating* (Unknown Sorokin). M.: SKII, 2009



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On the Path to the Noospheric Civilization



To Organizers, Participants and Guests Of the 4th World Congress of Global Civilization “On the Path to the Noospheric Civilization”

I cordially greet the organizers, participants and guests of the 4th World Congress of Global Civilization “On the Path to the Noospheric Civilization”.

Today when the world is in the process of profound changes, understanding the major trends of global development, finding the best answers to common challenges are particularly relevant. Continued importance to address these complex, large-scale problems is a rich scientific heritage of V.I. Vernadsky, with whose 150th birth anniversary your forum is timed to coincide.

Russia is actively involved in the efforts of the international community at the formulation and implementation in practice a model of sustainable development, including in the context of the harmonization of the Post-2015 Development Agenda. The activities of our country as a chairman of the Group of Twenty have been directed at creating conditions for steady and balanced growth of the world economy. This line will continue in the upcoming presidency of the Group of Eight. At the same time we firmly believe that the successful future of humanity is connected with ensuring partnership of cultures, religions and civilizations, creation of a fair and democratic polycentric system of global governance.

I wish you a fruitful work and all the best.

*S. LAVROV
Moscow, December 3, 2013*



The Moscow Declaration of Intellectuals “To Prevent a Global Catastrophe, To Ensure the Preservation and Prosperity of Civilization”*

We, the intellectuals of three generations — scientists and educators, politicians and public figures, post-graduates and students — participants of the 4th World Congress of Global Civilization “On the Path to the Noosphere Civilization” (Moscow, 03–05.12.2013) appeal to the United Nations and other international organizations, governments and political figures, businessmen and cultural professionals, leaders of the new generation with the following warnings and suggestions.

1. Humanity in the 21st century has faced with the threatening global catastrophe.

The catastrophe has many faces.

Environmental — depletion and rising in prices of vital natural resources, environmental pollution that has reached the critical level, climate change and the growing number of natural and man-made disasters and accidents.

Demographic — spread of depopulation, unregulated migration and epidemics, hunger and poverty of a large part of the population on the Earth.

Technological — aging of fixed capital, slowing innovation renewal of economy and labor productivity growth, the growing polarization between vanguard and lagging countries.

**The document is adopted
at the closing session of
the 4th World Congress of
Global Civilization, December
05, 2013, Moscow.*

Economic — the decline in economic growth, a series of financial and economic crises, growth of the parasitic “bubble economy” and the widening gulf between rich and poor civilizations, countries and social strata.

Geopolitical — increasing tensions and the number of inter-state and socio-political conflicts, international terrorism, a new round of arms race and a threat of a clash of civilizations.

Sociocultural — the crisis of science losing its creative and prognostic potential, excessive pragmatization and a loss of fundamentality of education, spread of commercialized, impersonal mass culture, moral degradation and undermining the foundations of the family — the main unit of society.

All these are manifestations of the crisis of civilization which is a consequence of the decline and decay of the industrial world civilization prevailed in the last centuries, sensate socio-cultural system. But at the same time they are the harbingers of the evolving integral, humanistically-noospheric civilization, the background and elements which are already being formed in the vanguard countries.

2. The scope and depth of the occurring crisis and transformations stumped the governmental and international, business and scientific elite now prevailing. It has failed to understand the nature and prospects of changes occurring in the world nor it was able to develop and implement a radical long-term strategy to meet all the realities of the new century, seeks to restrict itself to half-measures and pseudo-innovations prolonging the agony of the outdated systems and deepening the crisis. Such a short-sighted policy only multiplies the threats to the global civilization.

Steps undertaken by the UN and other international organizations to overcome the crisis and transition to sustainable development are inadequate to the scale of the crisis and insufficient to overcome it.

3. The path to prevent a global catastrophe is shown by such great thinkers as Vladimir Vernadsky and Nikita Moisseev, Pitirim Sorokin and Nikolai Kondratieff, Joseph Schumpeter and Fernand Braudel as well as by modern schools of thought developing their ideas.

Crises and catastrophes are to be surmounted on the basis of the science and technology revolution of the 21st century, a wave of epochal and basic innovations, establishing integral humanistically noospheric civilization. Scientists developed and presented, at the United Nations headquarters, at the UN Conference on Sustainable Development RIO+20 and to the leaders of the G-20, the Global Outlook “The Future of Civilizations” for 2050, and reports “The Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations” and to the G20 summit — “Scientific Bases for a Strategy to Surmount the Crisis of Civilization and Taking the Path of Global Sustainable Development.”

4. The 4th World Congress of Global Civilization (Moscow, December 3–5, 2013) discussed the strategic ways to surmount global crises: projects of the Centennial Plan for the integrated enhancement of the global ecological environment, establishment of the Organization to implement the plan and formation of the Global System for Monitoring, Forecasting and Emergency Response and revealed the significance of V.I. Vernadsky doctrine of noosphere as the basis for a

long-term strategy for global sustainable development. The appeals to the United Nations and governments of the world on these issues have been taken.

It also discussed the issues of a socio-demographic, science and technology base and financial and economic mechanism for transition to sustainable development.

5. Relying on a long-distance vision and understanding the depth of global transformations occurring in the world, the scientists propose:

- adopt the Centennial Plan for the integrated enhancement of the global ecological environment involving harmonization of development of society and nature on the noospheric principles;

- establish the Organization for the integral enhancement of the global ecological environment that has sufficient authority and resources to implement the Centennial Plan;

- set within the UN a Global System for Monitoring, Forecasting and Emergency Response;

- using V.I. Vernadsky's doctrine of noosphere, to develop and adopt a long-term strategy to surmount crises and take the path of global sustainable development on the basis of dialogue and partnership among civilizations, nations, social strata and generations;

- set up an up-to-date science and technology base for surmounting crises and transition to sustainable development based on the assimilation of achievements of the science and technology revolution of the 21st century and the 6th technological order, a wave of epochal and basic in-

novations, significant acceleration of the labor productivity growth rates.

6. To prevent the global catastrophe needs fruitful partnership of power and science. Recent decades have seen a dangerous separation of power from the advanced science and power without science is short-sighted, fussy and strategically helpless. It is taken shape the signs of overcoming this separation. It is established a Scientific Advisory Board at the UN Secretary General. Scientists have taken the next step: it is established an International Academy of Global Studies, which brings together scientists from different branches of learning, countries and civilizations to validate a long-term strategy to surmount the crisis of civilization, take the path of global sustainable development. It is established the Open University for Dialogue among Civilizations. The Congress participants appeal to the UN and other international organizations, governments of countries, business community to support these initiatives.

7. The Congress participants address the UN and governments of the world with an appeal before it is too late to heed the warnings and recommendations of scientists to develop and implement a long-term strategy that could prevent a global catastrophe and enter the path to the humanistically-noospheric civilization. They also address with appeals to the media and the Internet community to bring the vision and recommendations of scientists to authorities, global civil society, leaders of the new generation. Only together we are able to prevent the global catastrophe and to ensure the future for generations to come.



On the Path to the Noospheric Civilization Recommendations of the 4th World Congress of Global Civilization

Moscow, 3–5 December, 2013



The 4th World Congress of Global Civilization “On the Path to the Noospheric Civilization” dedicated to the 150th birth anniversary of the world-famous Russian scientist Vladimir Vernadsky was held on 3–5 December, 2013, Moscow.

The Congress organizers — Organization for Promoting Global Civilization, Pitirim Sorokin — Nikolai Kondratieff International Institute, RAS Institute for Far Eastern Studies, V.I. Vernadsky Non-Governmental Ecological Foundation in association with the Financial University under the Government of the Russian Federation, Institute for Economic Strategies and the Faculty of Global Processes at the Moscow State University named after M.V. Lomonosov.

The Congress sessions discussed the projects of the Centennial Plan for the integrated enhancement of the global ecological environment, establishment of the Organization to implement the plan and formation of the Global Integral System for Monitoring, Forecasting and Emergency Response. Moreover, the Forum participants discussed The Congress participants highly appreciate the significance of V.I. Vernadsky doctrine of noosphere as

the basis of a strategy for global sustainable development and establishment of the noospheric civilization and exchanged views on the socio-demographic and migration, technological, financial and economic components of the strategy for sustainable development and raising the role of science and education in validation and handling the global problems and lines of activity of the International Academy of Global Studies.

The Congress participants visited the memorial study of V.I. Vernadsky at the V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry..

As a result of fruitful discussions, the Congress participants have endorsed the following main conclusions and recommendations.

1. Global Civilization in the Face of New Challenges

1.1. At the beginning of the 21st century the global civilization has found itself in a state of deep crisis due to the sunset of the industrial society, a reverse of tendencies of global development, and change of civilizational cycles.

The contradictions between society and nature have aggravated: natural resources being depleted and increasing in prices, environmental pollution has reached the critical level; the scale of natural and man-made disasters increase and as their result a loss of lives and financial losses. It worsens the use of human potential: the unemployment is rising, especially among the young people; hundreds of millions of families suffer from hunger and poverty, while on the other pole it increases the energy wastage, overconsumption, super-

concentration of wealth, intensifying geopolitical tensions and conflicts as well as terrorist threats. The global civilization is in a state of growing instability that threatens the future of humanity.

1.2. The Congress participants believe that the global civilization is at a historical crossroads. If under the inertia-based scenario the today's prevailing trends persist, gray future is expected the humanity — environmental, socio-demographic, food, economic, geopolitical spiritual and moral catastrophes. , the prospects for degeneration of a rapidly aging mankind, the possible extinction of species Homo Sapiens as a result of a self-destructive clash of civilizations.

1.3. However, it is also quite realistic an optimistic, innovative- breakthrough scenario, if the healthy forces of the planet are consolidated for an appropriate response to the challenges of the new century, take the path of partnership among civilizations and nations, social strata and generations to overcome the crisis and the formation of the humanistically noospheric integral civilization.

1.4. The global community is seeking the ways to respond to the challenges of the 21st century. At the UN Conference on Sustainable Development, RIO+20 (June 2012) it is determined a long-term strategy targeted at eradication of poverty in the world and building a “green” economy. A system of global sustainable development goals for the period after 2015 is underway. It is established the High-Level Political Group on Sustainable Development and the UN Secretary General's Scientific Advisory Board.

However, these measures are not radical and of systemic nature, nor provide the reverse of the negative trends in the

development of the global civilization, it is necessary to develop and implement a scientifically validated long-term strategy to overcome the crisis of civilization and take the path of global sustainable development on the basis of dialogue and partnership among civilizations, nations, social strata and generations.

The Congress participants recommend the UN with the involvement of scientists to prepare and discuss at the RIO+25 Summit the draft of such strategy.

2. A Long-term Strategy for the Emerging Noospheric Civilization and Global Sustainable Development

2.1. The Congress participants welcome the measures taken by the Organization for Promoting Global Civilization on the prospects for the development of global civilization and the establishment of the world government, preparing the Centennial Plan for the integrated enhancement of the global ecological environment, elaboration by the Pitirim Sorokin — Nikolai Kondratieff International Institute (SKII) and submission to the UN the Global Outlook “Future of Civilizations” for 2050, reports “The Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations”, “Scientific Basis for Strategy to Overcome the Crisis of Civilization and Take the Path of Global Sustainable Development”, proposals for the establishment of the establishment of the Global System for Monitoring, Forecasting and Emergency Response. .

2.2. The Congress participants have given full treatment to the program document “Centennial Plan for the Integrated

Enhancement of the Global Ecological Environment”, noted its high scientific level, system nature and great practical importance for the future of humanity and prevention of ecological disasters, recommend the originators of the plan to update it in the light of discussion, submit to the UN Secretary-General’s Scientific Advisory Board and the UN Economic and Social Council (ECOSOC).

2.3. The Congress participants recognize that the successful implementation of the Centennial Plan for integrated enhancement of the global ecological environment it is necessary to establish an organization with sufficient authority and resources to implement the plan. The Congress participants endorsed and signed the Appeal to the UN and Governments of the countries on the early establishment of the Organization for integrated enhancement of the global ecological environment.

2.4. The Congress participants consider it necessary the development of a long-term strategy for global sustainable development that ensures balanced and synchronized transformation of all the basic components for sustainable development:

— Natural-ecological — the transition to the noospheric energy-ecological mode of production and consumption, conservation of natural resources, taking into account the interests of future generations, reduction of harmful emissions into the environment, the complex processing of accumulated waste and beautification of the environment;

— Socio-demographic — the elaboration and discussion at the UN Conference on socio-demographic development and migration the transition to a differentiated demographic policy focused on over-

coming depopulation in some countries and overpopulation in others, reducing the gap between wealth and poverty and eradication of poverty and hunger, radical improvement of public health service, development of global policy for optimization of migration flows and the observance of rights and interests of migrants, framing an international treaty to regulate migration;

— Technological — to unite the efforts of the countries and global community to accelerate the development and dissemination of the achievements of scientific and technological revolution of the 21st century and the new technological order, improvement on this basis the growth rates of labor productivity, de-monopolization of the market of intellectual property, definition in the UN system of an organization responsible for coordinating actions and development of innovation and technology partnership; the establishment of the Global Facility for Technological Development;

— Economic — to overcome the “bubble economy”, accelerating the economic growth rates, development of the strategy for the evolving integral economic system — socially, environmentally and innovation — oriented; the implementation of progressive structural shifts in economy providing the priority development of consumer and innovation and investment sectors and overcoming the overgrowth of the market infrastructure;

— Socio-cultural — to ensure the faster development of science and enhancing its role in innovation and technology and socio-economic development and in the validation of strategic decisions, preservation, enrichment and transmission to future generations the world scientific heritage,

strengthening the role of UNESCO in the coordination of science development and partnership for the assimilation of the scientific revolution of the 21st century, raising the fundamentality, creativity and continuity of education through effective ICT, providing large-scale assistance in training human resources for laggard countries; encouraging the revival of high culture, preservation and enrichment of the world cultural heritage and cultural diversity; strengthening of moral foundations of family and society;

— Geopolitical — ensuring dialogue and partnership among civilizations and nations in the transition to global sustainable development; increasing the role of the UN Security Council in the resolution of conflicts and in addressing international terrorism; expanding the powers and responsibilities of the United Nations in developing and implementing a long-term strategy for global sustainable development, integrated global environment enhancement and responding to emergencies. The Congress participants feel the need to develop a concept of reforming the UN system to more effectively carry out its functions in the changed world with a long-term prospect of transforming it into the World Confederation of civilizations and nations acting on democratic principles.

2.5. The Congress participants endorse the proposals to form a Global System for monitoring, forecasting and emergency response (GSMFER), and the establishment of the International Aerospace global environmental monitoring system and recommend the SKII to update and spell out in detail these proposals in the light of the discussion and submit to the UN Secretary-General a report on this issue.

2.6. Having discussed the challenges of globalization and regionalization, economic and financial mechanism for sustainable development, the Congress participants come to the conclusion that only in conditions of the multi-polarity it can be developed efficient financial and economic mechanism for sustainable development of the global community as well as regional integration organizations.

To develop a detailed “Roadmap” of forming a financial — economic mechanism for sustainable development it is reasonable:

— to develop the tools for the upward advancement of national economies and international associations based on the identification of strategic points of mutual interest ;

— to perform monitoring of manifestations of transformations in a globalized world that allow to make adjustments to the strategy for sustainable development of world economy;

— to define the basic criteria approach to the financial and economic mechanism for sustainable development taking into account the diversity of integration forms of economic interaction.

3. V.I. Vernadsky Doctrine of Noosphere as the Basis of the Strategy for Global Sustainable Development

3.1. Commemorating the 150th birth anniversary of the genius of world science, Vladimir I. Vernadsky, the Congress participants highly appreciate his doctrine about the transition of the biosphere into the noosphere as the fundamental basis of a long-term strategy for global sustainable development and the evolvement of

the humanistically noospheric civilization of the 21st century, feel the need to make better use of this doctrine expounded by N.N. Moissejev and modern noospheric schools, in the evolvement of humanistically noospheric, in researches and in education and support proposals for translation into the leading languages, publication and posting on the Internet of major works of V.I. Vernadsky, for a more profound incorporation of his academic heritage in the education system, endorse the proposal for creating a virtual multi-lingual museum of V.I. Vernadsky as a pilot project of the World Museum of the History of Science and the formation under the aegis of UNESCO the internet portal of the World Scientific Heritage for its preservation, enrichment and transmission to future generations.

3.2. The Congress participants endorse the initiative of the Pitirim Sorokin — Nikolai Kondratieff International Institute supported by the 5th and 6th Civilization Forums, of elaborating the UNESCO Universal Declaration on the long-term strategy of dialogue and partnership among civilizations in science, education and culture, and recommend the UNESCO governance to consider and support this initiative.

3.3. The Congress participants welcome the establishment of the UN Secretary General’s Scientific Advisory Board, consider this an important step in enhancing the role of science in the validation of strategic decisions and activities of the UN system, endorse setting up the International Academy of Global Studies and recommend to the UN Economic and Social Council and UNESCO to support this initiative

3.4. The Congress participants welcome the initiative of the Eurasian Economic Club of Scientists to develop a draft

of the World anti-crisis plan and setting up an Internet portal G-Global and recommend the Eurasian Economic Club of Scientists to take into account the outcome documents of the 4th World Congress in the preparation of the anti-crisis plan.

3.5. Given that it is currently developing a process of generational change and that the responsibility for the adoption and implementation of strategic decisions passes to a new generation of leaders, the Congress participants consider it crucial the active participation of young people in the development and implementation of the global strategy for sustainable development and the Centennial Plan for an integrated enhancement of the global ecological environment, welcome the initiatives to establish the Open University for Dialogue among Civilizations, making a series of course-books for leaders of the new generation, publication of the international science and education journal

“The Partnership of Civilizations”, setting up of Internet portal “New Paradigm”, support the initiative of International Association “Znanie” on the integration of navigation and telecommunication and information resources of the planet in the interests of the enlightenment and solution of humanitarian issues of humanity, and recommend the UNESCO and the UN Alliance of Civilizations to support these initiatives.

3.6. The Congress participants express gratitude to the organizers for creating the conditions for fruitful discussions and contacts and recommend to publish and put on the internet the proceedings of the Congress in the Russian, English and Chinese languages, submit the documents adopted by them and these recommendations to the senior management of the UN, ECOSOC, UNESCO, the UN Alliance of Civilizations, and the governments of the countries of the world.



Zhang Shaohua,
*Permanent Chairman of the
Organization for Promoting
Global Civilization
Chair of the 4th World Congress
of Global Civilization*

A Letter to All Participants

Dear Honored Guests,

The 4th World Congress of Global Civilization, co-hosted by four organizers: the Organization for Promoting Global Civilization (OPGC) and the P. Sorokin-N. Kondratieff International Institute, co-sponsored by Moscow State University and other two sponsors, now begins as scheduled. On behalf of the Congress's Preparatory Committee, I would like to extend warmest welcome to you all. Welcome to the beautiful Moscow for this conference!

It has been sixteen years since OPGC was its initial stages of development in 1998 and finally founded in 1999. It has been thirteen years since OPGC's First World Congress of Global Civilization in 2001. Over the past ten years, we have garnered support, help, participation, and concern from political leaders, academic leaders, religious leaders, and, especially, scholars from 112 countries. Here, on behalf of OPGC and all successive Congress' executive committees, I would like to express my sincerest thanks!

We are grateful for the generous support of the Russian Foreign Ministry and Russian Natural Resources and Ecology Ministry; help from UNESCO and UNIC; and the active participation and considerable help from P. Sorokin-N. Kondratieff International Institute, Institute of Far Eastern Studies of the Russian Academy of Sciences, Non-Governmental Environmental Fund of V. Vernadsky, Faculty of Global Processes of Moscow State University, Institute for Economic Strategy of Russia, and Financial University of the Russian Government!

How time flies! Most of OPGC's founders are now in their seventies or eighties. Professor Boris Erasov of Russia and Professor Zhai Mo of China have already left us. When OPGC was established, Vice-Chairs Mr. Tann Khoon Yong of Singapore and Professor Mohsen Mohebi of Iran, and I, were still young; but now are also more than sixty years old. Therefore, an important decision will be made after this Congress at the ninth meeting of the OPGC executive committee: all chairs, vice-chairs, secretaries general and vice secretaries of OPGC and chairs, vice-chairs and secretaries general of the conferences since the 5th Congress will be replaced by a new generation of young people.

Thus, the vice chairs hoped that I would write this letter on behalf of founders of OPGC: to tell those young people who will take the help who have come to participate this Congress, and those young scholars from different countries who are concerned about the future of the human beings: why, we scholars from five different continents established OPGC 10 years ago; and how, we as a team, were able to keep on fighting in spite of all setbacks and press forward with an indomitable will. Of course, I am also using letter to serve as an opening speech, in order to give each of our representatives from all over the world a greater chance to share their own thoughts and speeches.

1. Contemporary human civilization: «four generations under one roof,» «four in one,» «four worlds,» and «two types»

Let's begin with "four generations of human civilizations under one roof."

There are a growing number of archaeological discoveries that prove that there were many civilizations that preceded our current one. Thus, there is no need here to address this fact further.

According to paleoanthropologists and especially genetic anthropologists, the 7 billion humans living on the Earth today are all descendants of a couple of «Homo Sapiens» living in Ethiopia 150,000 years ago. That is to say, we humankind has an «evolutionary history» which is no more than 150,000 years. While, historians and especially cultural anthropologists have identified the «history of civilization» of human beings based on modes of production and the age of form of countries. Quite a lot of scholars agree that the history of human civilization has lasted for 7,000 years, and before that is «pre-history.»

In my opinion, this 7,000 years of history could be divided into four generations.

The civilizations of first generation are «ancient civilizations.» This includes the founders: the Sumerian and the ancient Egyptian civilization; the successors: the Akkadian, the Babylon and the Assyrian civilization; and the promoters, the Harappan Civilization in the Indus Valley (different from the Indian civilization which would emerge hundreds of years later), the Minoan civilization on the Aegean coast, the Xia civilization in the Yellow River basin (named by scholars as Huaxia Civilization or Chinese Civilization), and the Olmec Civilization in Central America. Of them, six ancient civilizations constitute ancient human civilization: the Sumerian Civilization, the Ancient Egyptian Civilization, the Harappan Civilization (or the Indus Valley Civilization), the Minoan Civilization, the Xia Civilization (or the Yellow River Civilization) and the Olmec

Civilization. Only the Yellow River Civilization that emerged in China did not disappear and has lasted for thousands of years and up until the present. Thus, the Chinese Civilization becomes the representative for «ancient civilization.»

This generation of civilizations began to decline roughly around A. D. 751, when «Battle of Talas» broke out between the Arab Empire and the Tang Empire, and continued with the following An-shi Turmoil in AD 755. The Tang Empire suffered disastrous defeats from outside Arab military forces, in addition to suffering internal distress; and still was not fully recovered by the end of the 20th century.

The civilizations of second generation are the “classical civilizations.” These civilizations include those of before the common era, such as the Indian Civilization in the Indus Valley and the Ganges Valley, the Mayan Civilization in Central America, the Persian Civilization in Western Asia, and the Ancient Greek — Roman Civilization on the Aegean coast; and those emerged after Christ such as the Byzantine Civilization, the Japanese Civilization, the Islamic Civilization, and the Slav Civilization. This generation of civilizations can only be represented by the Islamic Civilization, which was established by Mohammed in AD 622. Within 100 years it became the representative of human civilization, with a global religion and civilization that has continued to flourish for more than 1,400 years.

During Abbasid Dynasty in the Middle Ages in Baghdad, the Islamic world, in order to seek the best policies and achievements, began the Graeco-Arabic Translation Movement. This campaign saved many important Greek and Roman classics, which provided a full and accurate history historical record, abundant wis-

dom of governance and a solid theoretical basis for the third generation of civilization.

The third generation of civilization is “modern civilization” or “Modern Western Civilization,” as some historians have accurately defined. This generation of civilization, which has only just lasted for 640 years, germinated from the Renaissance, began with the Glorious Revolution of England, was developed in the American War of Independence and the French Revolution, and finalized during the Industrial Revolution and Information Revolution.

What I would like to emphasize here is that if we say that the Graeco-Arabic Translation Movement of the Islamic Civilization cultivated its stronger rival, the West, then we have to say that a series of revolutions, from material to spiritual, economic to political, and cultural to technological, which were brought along by Modern Western Civilization, only cultivated a series of adversaries lurking about the earth. In other words, the Modern Western Civilization has taught humankind concepts of freedom, equality and democracy, so now all humans are demanding freedom, equality and democracy from the West. Modern Western civilization has connected all people with advanced technology such as supersonic aircrafts, the Internet and satellites, and now the unified humans are resisting and beating back against the arrogance and power politics of Western world with the power of a unified “humankind.”

Indeed, history has proved repeatedly that a new civilization will arrive. Sure enough, the fourth generation of civilization is coming!

The fourth generation of civilization is the “global civilization,” which is exactly

the one that OPGC has been promoting for years. This is the new era of civilization that human beings will live in, as I proposed in 1992.

The initiation, definition, content, origin, framework and principles of global civilization have been fully expounded in *The Declaration of Global Civilization*. In short, global civilization includes two meanings. First, it is a civilization of the global world. Since the beginning of human civilization, human beings have only been concerned with promoting their own nation, sovereign state or indigenous civilization, while resisting or swallowing up other nations, sovereign states or other indigenous civilizations. However, today, we live the era of a “global village,” so we should advocate for a global civilization. Second, strive for a globally-natured civilization. That is to say, since humankind shares the same origin, roots, nature, character, and needs and lives on the same planet; and since we have already been living in the era of global village, then we must formulate “village regulations” regardless of race, nation, state, religion, party, gender, wealth and status to which all of humankind should comply. When there such “village regulations” apply to the entire “global village” such that there is a “culture of global village” there is a “globally-natured civilization.” As such, the representative of the Global Civilization can only be the United Nations, though it is not fully ready yet.

In fact, global civilization is a type of civilization that will emerge as human civilization develops to a certain level, which is determined by the nature of human beings. The reason why a human is called “human” and belongs to the family *hominidae* of primate species is that humans’ “primate nature” is much more advanced

than ordinary primates. This “primate nature” is so-called “intelligence.” Human intelligence is primarily manifested in two ways. First, humans can achieve self-transcendence by learning from others, as people often say that “human beings are creative animals.” Second, humans’ nature of creativity can only be fostered in society and in turn, humans’ nature of society can expand because of its creative nature. Thus, the creativity of human beings drives the society to expand constantly, and the expanded society will, in turn, spark more creativity. Then, global civilization and the oneness of humankind will be realized, as it is the inevitable result of human progress.

I discussed this line of thought more in “*The Need-Creation Theory*,” published in 1990: “*The reason that humans could become ‘Humans’ and that humankind in nature is on the most advanced level compared with other species, is that other animals all belong to animals with the nature of ‘species’, while only we humankind is a kind of animal with the nature of ‘race’. Thus, as long as we are humans, and as long as humans are a kind of life existence which has nature of creativity and sociality, humankind will inevitably develop in succession through tribal civilization- race civilization-national civilization-international civilization-Global Civilization.*”

Therefore, Global Civilization will eventually emerge sooner or later. It’s just our great fortune that it arises in the 21st century.

Here we encounter a problem: what is the iconic event of the fourth generation of human civilization? It is the “establishment of the United Nations,” or “the opening of the 1st World Congress of Global Civilization”? Or in short, the representative of the fourth civilization

is the United Nations or the Global Civilization? In my opinion, the establishment of the United Nations was only an iconic event that demonstrated that the field of international politics had developed to an important phase. However, the United Nations has not resolved various major international political problems since it was founded, and it's still just an "international forum" today. In fact we can see the problem more clearly from the respective "position" of the United Nations Civilization and the Global Civilization: the United Nations Civilization is at most one which is inter-"sovereign states" and yet in "the diplomatic field," is characterized by "regular quarrels" and "rubber stamping." As UN Secretary General Kofi Annan once said, "our post-war institutions were built for an inter-national world" (see *We the Peoples-the Role of the United Nations in the 21st Century*, section 30). In contrast, "the Global Civilization" — as has been shown by a series of documents — is a mode of civilization which fits the "global world," a civilization which is indeed "based on, catering to, for the sake of, and to advance all humankind". We can also see the problem clearly from the relation of them. The Global Civilization is a brand new human civilization system which includes achievements of indigenous civilization, global economic mechanism, the Structure for governance of global environment and ecological systems, a World Parliament, a World Government, a World Structure of Religion, a World Alliance of Technology, common moral rules of humankind, a new international law system with a World Constitution, the Law of World Military Force, the Law of Nation-State, the Law of Head of State. Such "system of global civilization" certainly could contain what

the United Nations would like to express. On the contrary, the United Nations Civilization cannot possibly embody the entire content of the Global Civilization in the same way that a person could not put a large steel ring into a smaller one, unless he is a magician.

Someone may think that such periodization of history is far-fetched. From the view of human civilization history, however, most of "symbols of generations" of civilization are insignificant events that seemed trivial at that time. For example, the symbolic event that divides the first and the second generation of civilizations was just a battle, the Battle of Talas. If so, the real representative of the fourth generation of civilization should be "the 1st World Congress of Global Civilization." Of course, it's just an academic perspective and all other different opinions about the question should be expressed and discussed. Time will give answer.

Above we have discussed four generations of human civilizations. We did so was not just making divisions of history into periods as historians usually do. Our purpose is to figure out the relationships between the four generations of civilizations and their implications for our lives today.

I think the relationships of these four generations of civilizations can be understood through "four generations under one roof," which is in fact the title of the seminal work written by Laoshe (autonym "Shu Qingchun"), a famous Chinese novelist who was very likely to win Nobel Prize in Literature during his time, but died too early and abruptly. This book depicts various family conflicts, emotional entanglements and spiritual pains stemming from the four generations of a family liv-

ing together under one roof, just because it's highly promoted in Chinese tradition that three or four, even five generations should be living together, that is to say, generations of people should "eat and live together when alive, and be buried together when dead."

The four generations of civilizations in the contemporary era are in the same situation. Let's take the four representatives of them as examples: the Chinese Civilization, the representative of the first generation of civilizations, seems to be in the midst rejuvenation, and in fact, has just begun its "great rejuvenation;" the Islamic Civilization, the representative of the second generation of civilizations, has reflected for long time on past injuries and is preparing for a new rising; the European and American Civilization, the representative of the third generation of civilizations, is still prevailing, very influential, and full of ambition; and the United Nations, the representative of the fourth generation of civilizations, is rapidly transforming from its traditional role as "international forum" to a new axis of international political power.

The four generations of civilization have four forces and four ulterior motives, which were all bred in the same uterus of our Mother Earth. They all only take care of their own affairs and fight for their own interests. What complicated relationships, what sharp contradictions and what serious problems!

Nevertheless, what is behind the relationships, the contradictions, and the problems is glum: four rustling angry men, all faced with the same helplessness. None can leave the earth, yet none to them can find a way to take what they want from the earth for their own, and none of them

have any means to get rid of the other opposing three.

How can "four generations" live "under on roof?" This is the most important and urgent question that all humans must confront and figure out together in 21st century and the centuries that follow.

Now, let's talk about the situation of **"four generations of human civilizations in one."**

After pondering deeply over the "four generations" of civilizations, you will find that they are also at "four positions," for their times of emergence, content, characteristics, and even colors of birthplaces are all different from one another.

From the perspective of time, the first generation of civilizations began from 4900 B. C. and lasted for 5,600 years till 7th century; the second generation of civilizations lasted for 1,400 years, the third 640 years, and the fourth just 13 years since 2001 when the "1st World Congress of Global Civilization" convened.

From the perspective of content, the first generation of civilization is a land-agricultural civilization, the second a nomadic-commerce and trade civilization, the third an ocean-industry and commerce civilization, and the fourth a comprehensive civilization where agriculture, industry, commerce and culture are unified.

From the perspective of defining characteristics, the first generation of civilizations is a kind of inter-personal civilization, the second a kind of human/spiritual civilization, the third a kind of human/material civilization, and the fourth a kind of material/human/spiritual civilization where the former three are mutually supportive, complementary, and elevating.

From the perspective of color, the unique colors of the four generations of

civilizations stand out vividly when we unfold a colored world map: Chinese Civilization, the representative of the first generation of civilizations, has the color of the land, yellow; Islamic Civilization, the representative of the second generation, has the color of grassland, green; modern Western Civilization, the representative of the third generation, has the color of the ocean, blue; and the civilization of United Nations or Global Civilization, the representative of the fourth generation, has the color of rainbow, from outside to inside or from east to west are in sequence the yellow belt, the green belt, the blue belt, and lots of colors difficult to identify by the naked eye.

“The fourth generation of human civilization, the Global Civilization, has a shape of rainbow!” It reminds me of expressions about the rainbow in the Bible (Genesis 9: 8–10, 12–13, 16, ESV):

“Then God said to Noah and to his sons with him, ‘Behold, I establish my covenant with you and your offspring after you, and with every living creature that is with you, the birds, the livestock, and every beast of the earth with you, as many as came out of the ark; it is for every beast of the earth.’”
“And God said, ‘This is the sign of the covenant that I make between me and you and every living creature that is with you, for all future generations: I have set my bow in the cloud, and it shall be a sign of the covenant between me and the earth.’”

“When the bow is in the clouds, I will see it and remember the everlasting covenant between God and every living creature of all flesh that is on the earth.”

Whether or not, the theme of this Congress, One Hundred Year Governance of the Global Environment and Ecological Systems, is pursuing the covenant “be-

tween God and the earth?” Could it be said that God really saw the “Rainbow of Global Civilization” arch across the sky of Moscow in December 2013? And are we proving this oracle to be true? Meanwhile, I am reminding of the greatest Russian poet Aleksandr Sergeevich Pushkin, Mayakovsky V., also can not help but want to write a poem: I am seeing, on December 3rd 2013,/The bow that God described to Noah in Genesis.

Descending in the skyline of Moscow,/Into the Red Hall of Russian Academy of Sciences Presidium Building;/I am seeing,/Seeing the bow illuminates,/Every corner of the hall, and all people there,/And all souls there; //Then I am hearing,

Hearing the speeches of the Fourth World Congress of/Global Civilization in the hall,/Evaporating slowly into a bow of Global Civilization,/Reflecting into the sky of Moscow,/I am seeing and hearing,/Hearing the curved bow,/Illuminates, surely illuminates/The whole universe!/. May God bless we human beings who have just awoken!

Let’s continue our talk. These four civilizations are not only in “four generations” and at “four positions,” but are also interconnected and in unity. For instance, Chinese people living off the land and West Asians who famous for their commerce and trade, are both like infants who have been hungry for long, desperately sucking the milk of the Mother “European-American Civilization.” On the other side, Westerners and West Asians are both searching for the essence of agricultural civilization and green agriculture, from East Asians. The situation is the same in regards to spiritual matters. For example, the Chinese people who only worshiped

emperors and offer sacrifices to their ancestors for thousands of years, now fanatically believe in God of the West and Allah of the West Asia.

Let us again look at **“the four worlds of contemporary human civilizations.”**

“Civilization” is in fact very complex, though, at first blush, it appears to be a simple word.

Chinese Professor Yi Zhongtian once described civilization thus: “civilization is liquid.” In reviewing the history of human civilization, we can see that anything that can be called “civilization” has its own “spring.” It spreads from point to surface, part, circle, and finally becomes life style of a whole nation and whole region, and even surpasses national boundaries and becomes worldwide. When this spring is occupied by the strong, it will evaporate, changing from a liquid state to gaseous state, or gasify and disappear (as has happened to civilizations that have already disappeared); or it will float to other others, evaporate and reappear as rain and nourish other places (as Indian Buddhism did for China); or turns back into liquid (as Jewish civilization experience from scattered in various countries to re-establish a state).

As Professor Yi observed, there are many special patterns of civilization. Indonesian Civilization is regional, Slav Civilization is national, and Japanese Civilization is both regional and national. Such characteristics make it difficult for other states or nations to assimilate with them, and vice versa.

Then, how should we understand the basic pattern of the contemporary human civilization? In the 1970s, Mao Zedong put forward a famous international political theory called “the theory of three worlds.”

We can follow this idea and divide contemporary human civilizations into four worlds: the first world contains modern Western civilization, Islamic civilization, and Chinese civilization; the second world includes Slav civilization, Indonesian civilization, African civilization, Japanese civilization, Latin-American civilization, and Jewish civilization; the third world contains Korean civilization, Mongolian civilization and Southeast Asian civilization; and the United Nations civilization or Global Civilization, different from all above, belongs to the fourth world.

Without the support and recognition of sovereign states, which are still regarded by all humans as “god,” the United Nations Civilization or Global Civilization has been classified as a “weirdo.” However, there is a big secret behind the classification of the four worlds. The standard of classification is based on “quantity,” which is external and determined by sheer strength of power. If we venture on level deeper, and make our classifications based on “quality,” then we will reach some subversive conclusions.

At last, let’s think about **“the two types of contemporary human civilizations”**.

When carefully pondering over the four worlds of civilization, we’ll find that the four worlds, in fact, do not belong to the same type, but two types: one type consists of territorial civilization, individual civilization, superficial civilization, and civilization of relationships; while the other type is a universal civilization, collective civilization, deep civilization, and human civilization. The first, the second and the third world we talked earlier all belong to the former type, and the fourth world the latter.

From the view of spacial dimension, the former three worlds are all local or partial, indigenous or national civilizations; while the fourth world is a universal, worldwide and human-oriented civilization. The former three worlds only promote the interests of a minority; while the civilization of the fourth world endeavors to benefit the whole earth and all of humankind.

From the view of time dimension, the former three worlds are all civilizations of past, and all promote “their own” and “so-called” civilizations by stupid, barbaric and bloody ways; while the civilization of the fourth world is the only one that represents future human civilizations, and that promotes all civilizations by mature, inclusive, and complementary ways. In a word, this is a kind of civilization “promoting civilization by civilized ways.”

From the perspective of foundation or fundamental nature, the former three worlds are dependent on sovereign states, which means that their existence is based on force or violence. Such civilizations are filled with the potential of danger. However, a civilization that relies on violence should not be called a civilization, nor can an dangerous civilization be called civilized. On the contrary, the civilization of the fourth world, according to documents of the 2nd World Congress of Global Civilization, is a civilization where each country’s military forces will be abandoned and only police that simply maintain order will remain.

The difference between the two types of civilization will be more explicit and obvious when we examine the principles of Global Civilization. Here I would like to reiterate the contents concerning “the Principles of Global Civilization” as stated in *The Declaration of Global Civilization*:

“First, every current civilization has features of not only distinctive individuality but also commonality that can be found among all civilizations. Only through the commonality can we be able to understand and optimize the individuality. Only then can we be able to resolve and eliminate conflicts between civilizations. This is the only way that complies to the principle of promoting civilization by civilized means. It is impossible to promote civilization by any uncivilized or anticivilized means. This is the First and Foremost Experience of nearly 10,000 years of civilization history.

Second, all living and passed civilizations are produced in tribal age, nation-state age, or region-centered age, so it is perfectly normal to have differences and conflicts between civilizations. But today, any act that guides difference and conflict towards violence and warfare — no matter what the reason used for justification — and any cultural penetration and civilization exportation by ways of economic sanction, political intimidation, or military intervention is nothing less than a direct anticivilized deed. Therefore, constraining the degree of conflict strictly to a nonviolent, nonforce level is the First and Foremost Principle in the twenty-first century.

Third, in the tribal era, the interest of the tribe is the highest; in the nation — state age, the interest of sovereign state is above all. In the twenty-first century with increasing human integration only the collective interest of the whole of humanity is the most fundamental welfare for every region, state, and individual. Therefore, the interest of the whole humanity is the First and Foremost Interest above all. Fourth, humans are the crafted work of the universe, but not the gods and never the soul of the universe. Humans are children of the Earth, but not the lords of all beings, and never kings of the Earth. Humankind is a collective race, not just a group of social animals and never a solitary creature. Other human beings are the true re-

flection of us, but not our servants and never our enemies. The origin of brutality and arrogance is ignorance in humanity. Therefore, to understand the true meaning of humanity is the First and Foremost Lesson humankind must humbly learn today.

Fifth, all members of the human family, whether black, white, yellow, or red, male or female, young or old, are sharing the same humanity. We are all equal. We all have the same needs. Therefore, the well-being of individuals is always fundamental to the whole of humanity. Conversely, humanity is a whole integrated by individuals. The safety of the whole is always fundamental for any individual. In other words, Human Right and Race Right are the two interconnected poles of the humanity right system. Between these two poles are sovereignty rights, government rights, and civil rights including the Right of Territory, the Right of Air Space, the Right of Ocean Space, the Right of Property, the Right of Military Commanding, etc. All these rights are supplementary to and serve Human Right and Race Right. Therefore, all other rights must be subordinate to and serve Human Right and Race Right. This is the First and Foremost Order for those decision-makers of all kinds of rights in human society in the twenty-first century.

These five “first and foremost” principles are the fundamental of Global Civilization.”

Based on thoughts above, after deeply research into the history, current affairs and the future of human civilization, I reached three conclusions as follows:

(1) If we say that it is the first declaration of humankind is that humans transformed from animal to “human,” left Africa and settled down in various places on the earth and created their own indigenous civilizations, then, it is the second declaration of humankind that humans step out into the world, become a species

of unity, and begin to create a civilization that can belong to all human beings.

(2) In the midst of initial stage of Global Civilization era, humans used modern technology to make their feet, eyes, mouths and ears enter into the global world; but their thoughts, values, feelings, knowledge, education, allocation of the earth resources, extent of individual freedom, scope, of human rights, and so on still remain in the stages of indigenous civilization. Such a fact determines that the first half of Global Civilization can only be a “bi-civilization stage, where the Global Civilization will lead indigenous civilizations as they exist in harmony.”

(3) The true nature of the bi-civilization stage is contradiction and conflict between the two types of civilizations. That is to say, indigenous civilizations will, on one hand actively participate in the global world and enjoy the fruits of Global Civilization, but on the other hand, will actively challenge the progress of Global Civilization. Therefore, the fundamental conflict in the era of Global Civilization era will always be the conflicts between various indigenous civilizations and Global Civilization. As to those dazzling conflicts between different indigenous civilizations, such as the conflicts between Europe, America and Iraq with Libya, and the conflicts between Europe, America and Syria with Iran, the true reason behind all the chaos is the question of how to deal with Global Civilization and the problem of contending for global domination.

Undoubtedly, the Global Civilization, which represents the direction of development of human civilization, will eventually win the fight against indigenous civilizations. This is determined by the laws of evolution of civilization and can-

not be changed. Nonetheless, during the first half of this battle, it's highly possible that some indigenous civilizations, especially certain national, regional or even powerful civilizations, will conspire to "de-globalize," which may even lead to a third world war. Therefore, in the coming decades, the really serious problem is to teach humans, particularly political, religious and academic leaders. Among the diversity of content to be taught, the most important and basic is to teach them "re-understand sovereign states," to conform to the times, to proactively alter the traditional position of "state," (i.e. abandon the stereotype that just emphasizing regime at home and claiming sovereignty to the outside), and establish a new thought that works at home and while acting diplomatically with the greater world.

II. Humanity, Culture, Civilization, Global Civilization, and States under the conditions of Global Civilization

We live on the earth, and the earth was born in the universe. Thus, we begin with the universe. The universe has its own definite laws. Otherwise it would not be arranged in such perfect order. Its laws are the "consciousness of universe" as presented by Austrian scholar Erich Jantsch, and the "spirit of the universe" as stated by German philosopher Hegel.

The universe has its own spirit, which are presented as the Universe Force, Universe Character, and Universe Will. Universe Force is the momentum, the driving force and the structural strength behind the evolution process. Universe Character unifies all things in the universe. It not

only unifies the planes of macroscopic and microscopic, spheres of distant and proximate, and realms of the highest and the lowest, but also unifies cause and effect, singularity and multiplicity, the physical and metaphysical. Universe Will is the certainty with which the universe regulates its existence, the novelty that activates, awakens, and develops the potentiality and possibility of everything during its interaction with others. It is the transcendence that enables everything to continuously exceed itself through interaction with others.

Human beings are the product of the Universe Force, Universe Character and Universe Will. More than that, when creating human beings, the universe humanized its force, character and will so that human force, human character and human will were generated.

Human force is the force of choosing, creating, developing and deepening civilization. Human character is transforming individual capabilities through socialization to eventually obtain the essence of humankind or even the universe; or in turn, human character is transforming the capabilities of the human species as a whole and even the universe through socialization to achieve self-actualization of individuals. Human will is becoming stronger and stronger, happier and worthy of the title of Human by means of and along the path of civilization; being increasingly worthy of the rules and requests of Mother Universe.

Human force, human character and human will we talked above together constitute humanity. Since humans have human nature, realization of this nature brings about culture.

Culture, in essence, is externalization of humanity. No wonder that numerous

men of wisdom and men of benevolence take the same view that “culture is humanization.”

However, the idea that “culture is humanization,” though somewhat clever and ingenious, does not help people to understand culture.

Then, what is culture? And how is it defined? In fact, this is still a pending question, even though it is a phenomenon has emerged for nearly ten thousand years. Since British scholar Taylor (E. Burnett Taylor, 1832–1917) formally defined culture less than one hundred years ago, scholars have given more than two hundred different definitions, nearly each of which is long, obscure and unnatural.

It’s too difficult to define culture and even those “extremely arrogant” culture scholars would be ashamed of it. For example, the well-known American cultural anthropologist Professor Lowell (A. Lawrence Lowell, 1856–1942) once embarrassedly admitted that:

“There is nothing in the world more elusive than culture. One cannot define or circumscribe it, for it has no precise bounds. One cannot analyze it, for its components are infinite. One cannot describe it, for it is Protean in shape. An attempt to encompass its meaning in words is like trying to seize the air in the hand, when one finds it is everywhere except within one’s grasp.”

Nevertheless, “states without borders could not be called states, and definitions without limitations are not definitions.” Scholars of culture should tell people what culture is.

Last year, I saw a definition of culture given by a Chinese scholar Yu Qiuyu, which I think is more than reasonable and persuasive when compared with other definitions. Professor Yu defines culture as such: “Culture is an ecological community

containing spiritual values and life-styles. By means of accumulation and guidance, culture establishes collective personality.” I agree with this definition because it: (1) positioned culture — culture is a kind of “ecological community;” (2) determined the nature of culture — culture is a set of “spiritual values and life-styles;” (3) defined the function of culture — culture “establishes collective personality;” and (4) clarified the way culture works, “by means of accumulation and guidance”.

Another reason that I value this definition so much is that it reminds me of the concept of “embryo of culture” I created in the 1990s. The concept of “embryo of culture” means that during an era where people continuously experience social and economic unrest and feel helpless, someone or something will go deep into their hearts, examine his or their conscience, and ask questions like “what is humanity,” “what is necessary for humanity” and so on. After a long time of wandering and questioning, finally, solid ideas will formulate. Had these ideas aroused emotional resonance, positive responses and been practiced, then the resonance, responses and practice would form “culture”. At that time, this person or those people would become sage or groups of sages, and his or their system of ideas would become the “embryo of culture”, or the “mouth of spring” as mentioned earlier.

Thus, culture is something both internal and spiritual. Internal things will inevitably show themselves, and externalize into reality and objective existence; spiritual things will also necessarily appear in matter and show as up facts and material objects. The externalized parts of culture and their internal parts constitute a unique system of human existence where

the internal part act in cooperation with external parts, and virtual parts interact with the actual. Such a system is “civilization”.

Civilization can be defined in both a broad sense and in a narrow sense. In its narrow sense, civilization is contrasted against with ignorance and barbarism. Thus, applying proof by contradiction, civilization in its narrow sense is not ignorant and not barbarian, which is easy to understand. According to our earlier discussions, civilization in its broadest sense could be defined like this: civilization is a system of human existence whose root is humanity, core is culture, carrier is society, and characteristic is time. More precisely, such an expression can be added to the definition so that “this system of human existence will in turn alter humanity, culture, society and time.”

If we define civilization like this, then “civilization” would also have its own force, character and will. The force of civilization lets humans get rid of ignorance and barbarism; the character of civilization makes both spirits and behavior of humankind close in on humanity, and even advance humanity by promoting culture; the will of civilization makes humans experience in sequence the clannish civilization, the tribal civilization, the ethnic civilization, the national civilization, the international civilization, and finally arrive at the Global Civilization. (Of course, after the Global Civilization, humans will enter into Universe Civilization which we’ll not talk today.)

“Global Civilization” was put forward logically and reasonably.

Historically, humans have experienced “international civilization” and the civilizations before it. Or we can also say that

humans have been living in the stage of Global Civilization for more than ten years, as explained earlier. However, we have encountered many confusions and difficulties since the Global Civilization era began, as our predecessors did when they just entered into a new ear of civilization. And our confusions are even more and difficulties are rather more serious, because the former three stages of civilizations all belong to regional civilization, while Global Civilization is universal. Among the issues are such like how our religions should adapt to global existence; how to choose or create a language to be the first language of all humans and put native languages or local dialects to the second or third language; how to choose or establish a world currency and degrade domestic currencies to the second, and so on.

Here I just want to talk about how should the “states” face themselves under the conditions of Global Civilization.

Logically, “states” are product of civilization. 7,000 years ago, after long time of seeking, humans, in order to formulate, promote and advance civilization, finally confirmed the development path of civilization that “establish and promote civilization by means of states.”

However, “alienation” is one of the fundamental rules of development. This is even more true for those that are more important. “States,” probably the greatest creation in the history of human civilization, have suffered the most serious kind alienation. For example, “states” was created just because people wanted to live a kind of civilized life. But no sooner they had been created, than states started the process of alienation. As German thinker Karl Marx’s said, the state “comes dripping from head to foot, from every pore, with

blood and dirt.” In this regard, when reading books, whether fairy tales or college textbooks, people will always feel confused when they arrive at content about states: why are they full of battles and conflicts, blood and bodies? Why do the sages, heroes and other good persons in history all go through hardship and experience tragedies? Why do the initiators of evil turn out to be “our beloved countries?”

The purpose we discussed the issue of alienation of states is to draw forth the next proposition: as the era of Global Civilization comes, states now are given the first historic opportunity to thoroughly reform themselves and make a turn for the better. Because, history nearly universally proves one conclusion that as soon as various ethnical groups form a state, they will become intimate families with one heart. Similarly, since contemporary humans have already lived in the era of Global Civilization, more than 200 states on the earth thus will become members of the same human family. Therefore, changing the traditional position of states, that is changing from maintaining the existence of regime and sovereignty to organize the people and lead them to cooperate with other states and co-establish civilization of globe, is well-reasoned and can be expected soon.

III. One hundred-year governance of global environment and ecological systems is the only path to a world of great harmony

One world of universal harmony? Is it possible?

One world of great harmony is indeed the common ideal of sages and wise men all over the world. People have been

dreaming of, calling, and fighting for it for thousands of years. But today, it is still a distant dream.

I believe that our precursors failed to achieve this goal because the time was not right, conditions were inadequate, and the approach was wrong. However, I think that the era of one world of great harmony will come soon. Because, since humans entered into the era of Global Civilization, or since the beginning of the 21st century, it could be shown by a plenty of evidence that the time has come, the conditions are adequate, and the right way has been found!

In one of his books, David Grinspoon, Baruch S. Blumberg NASA-Library of Congress Chair in Astrobiology and curator of Astrobiology at the Denver Museum of Nature and Science, pointed out that with the invention of the steam engine by James Watt in 1784, or more precisely, with the first nuclear test, a brand new geological time period, the Anthropocene, has started. As he explained, the success of nuclear tests, in particular the breakdown of the nuclear facilities would lead to some local disturbances for a long time, and the biggest signature would be the perturbation to the carbon cycle, which will take tens of thousands of years to repair itself. Thus he holds that the first atomic bomb tests produce a signature, both isotopic and in terms of geological structures.

In fact, Antonio Stoppani put forward the notion of “Anthropozoic era” as early as 1873. Pavlov from Russia even clearly proposed the concept of “Anthropogene” in 1922. The other theme of this Congress is to discuss academic thoughts of Vernadsky, a famous Russian scholar. Based on the precursors’ research findings, Professor Vernadsky established the theory of

“Noosphere” in 1962, which often called the theory of “Anthroposphere” by Russian scholars.

Their point of view is supported by increasing evidence of human influence on natural global processes, such as the sediment transport being supplanted by our construction processes; land occupation and transformation; water course deviation and water reserve appropriation; massive extinction and introduction of invasive species; development and widespread use of previously non-existent chemical substances (e.g. plastics and persistent organic pollutants); and even the creation of new elements (the last 20 in the periodic table).

Even if we do not mention all facts above, just one fact that humans can now prevent catastrophic asteroid impacts by using nuclear technology sufficiently illustrates that the earth is at a significant evolutionary moment: now that humans are able to influence other celestial bodies, they can also destroy their own planet. More seriously, if the enmity between states and the rancor between religions continues to accumulate and can't be defused in time, battles will inevitably break out all over the world, at a time when humans not only have the capability but also the boldness of self-destruction. Terribly enough, we humans have already have such capabilities, and are becoming increasingly bold.

How could it be otherwise? Humankind has used 7,000 years only to forge four “double-edged swords.” The first is “technology,” which could either benefit or harm humans. Unfortunately, contemporary technology, in particular the military technology, is developing at a rate that can only be destructive. The second

is “states,” which could bring people happiness or disasters. But it is a shame that today quite a few states are running wildly on the way towards disaster. The third is “religion,” which could either purify or destroy the human soul. Sadly, some religions today have either turned their believers into sorceresses and sorcerers who are incompatible with contemporary civilization, or trained their followers to become body bombs, which is contrary to basic humanity. The fourth is “wealth,” which could either enable people to live prosperous lives or lead to greed. It is a pity that humans today, from rich Europeans and Americans to poor Africans, from nobles living in splendid palace to farmers growing up in remote villages, few are not “materialists” pursuing nothing but self-interest and money.

Such are the humans today! Such is the modern civilization that people has always indulged in! Are we going to represent the “Anthropocene” by such “fruits of civilization?” Are we really going to destroy what is, as far as we know, the most beautiful and lively planet in the universe, with our own hands? Is humankind really an unwell species with suicidal tendencies?

In fact, the Second World War has just barely ended when the Americans and Soviets seemed to forget the disasters of war and began the Cold War and started the nuclear arms race. From then on, humankind walked to a “T-intersection” for the first time in history. Our choice was either to keep on acting absurdly until we destroyed ourselves, or to turn over a new leaf immediately and to be born as “human” again.

Things will develop in the opposite direction when they become extreme. And adversity leads to prosperity. Indeed, it al-

ways seems that humankind cannot realize and regret its previous mistakes until it is far too late. Standing at this crucial “T-intersection,” contemporary humankind is also this way. In fact, the rational behind the misdeeds repeatedly committed by human beings is very clear and simple. Humans have been used to “burying themselves in immediate things, without raising head to watch and keep the right direction,” so that they could not notice that they have gone so far in the “wrong direction.” In other words, things could change as long as humans slow down, think carefully what they really want, and then raise their heads and look forward to rethink whether or not they could get what they really want while following their current path.

To teach, to change, to save, and to advance humankind, which once were so important, serious and complex issues, for humans in the 21st century, unexpectedly turn to be so simple. As long as humans raise their heads, and have a look at their road direction, a miracle will happen!

In order to let humans see clearly a true self and seriously review its “so-called civilization,” I started to work on it restlessly from the beginning of 1992. In the next year, a long monograph titled *The Second Declaration of Humankind* was published. Then, after more than 5 years’ painful consideration, I finally decided in 1999 to convene scholars all over the world who cherish the same ideals and follow the same path, to establish an international platform for scholars who have the sense of human responsibility from various countries, and to promote our thoughts and ideas around the world by means of holding World Congress. This is the origin of establishment of “Organization for Promoting Civilization” (OPGC).

One month later since OPGC registered, we held the first meeting of the executive committee in Australia. After a full seven days’ meeting, a resolution was adopted: we planned to announce our theoretical programs, political programs, religious programs, environmental programs and cultural programs and that is “five programs” in nearly upcoming 20 years and to hold respectively five sessions “World Congress of Global Civilization” in the five continents. Using these five continents, we described a completely new world of great harmony — one which is no longer unrealistic, no longer an academic, no longer a political slogan, no longer a moralizing, no longer a simple longing for prospects, no longer counting on God, and not an unattainable dream.

In July 2001, OPGC hosted the “First World Congress of Global Civilization” in Hilton Hotel in Sydney Australia, and OPGC’s theoretical program “*The Declaration of Global Civilization*” was passed by the Congress with opposition of one vote. The theoretical declaration that I finished on commission of the declaration trustee is not only the first theoretical one in the history of human civilization, but also the first in human history a theoretical manifesto for the entire human beings. “*The Declaration*” has been adopted and been supported by the 97 national or religious leaders, or heads of states, and the scholars.

In November 2005, OPGC hosted the “2nd World Congress of Global Civilization” in the United Nations Plaza Hotel in U.S. A., and an OPGC political program *An Open Letter to UN Proposing the Establishment of a World Coalition Government* was approved by the Congress without opposition. The world political declaration drafted by me is the first one in human

political history that was for all sovereign states in the world, was co-signed by scholars from more than 40 countries, and is non-partisan, non-national, anti-violence, anti-split, anti-discrimination. After that congress, the United Nations formally accepted this “*Open Letter*” and my monograph *My Ideals of a World Coalition Government* as an attachment.

In October 2009, as soon as our preparation for the 3rd congress in Jerusalem had been completed, the World Health Organization raised the H1N1 flu alert level to the highest level. After various communications with all parties, the Preparatory Committee of the Congress made a decision that the meeting would be changed into a one-month web online conference. The OPGC religious agenda *Religious Reconciliation and Spiritual Solidarity in the Age of Globalization: Proposal to Main Religions of the World from the Third World Congress of Global Civilization* was adopted during that congress. Christian scholars, Catholic scholars, Muslim scholars, Buddhist scholars, Taoist scholars, academics and non-Hindu religious scholars from 11 countries wrote our “Proposal,” which I edited. Thus, this “Proposal” may be the first programmatic document in human religious history that reflects the great unity of world religions.

We are currently convening the 4th Congress in Moscow. This Congress will pass a resolution on OPGC the Environmental Programme *An appeal to the United Nations and various governments of the world for the Immediate Foundation of a Structure for Comprehensive Governance of the Global Environment and Ecological Systems* (hereinafter referred to as “*The Appeal*”) and as attachment *The One Hundred Year Plan for Comprehensive Governance of the Global Environment and Ecological Systems* (hereinafter

referred to as “*The Plan*”). From two conference documents which have already been handed out, we can easily find that the human environment as defined by the natural ecological environment, social environment, human ecology, spiritual ecology environment consisting of organic unity, is the first time in the history of the eco-environmental governance; that we consider governance as a global ecological environment planning principles, rigorous design, step orderly, comprehensive preparation, joint participation in the “Centennial project,” is the first time in the history of human engineering; that we establish a structure for ecological environment management of the world, which is specialized, independent of the United Nations through the United Nations’ aids and, relying on sovereign and through sovereign states across both political authority and financial support, at least 100 years to the work of international organizations, will also be the first time in the political history of mankind; in addition, while the “structure for comprehensive governance of the global environment and ecological systems” obeys to existing international law, with the expansion and deepening of the work, the structure will create a set of international legal systems for all humankind, reflecting the global civilization, showing a better future, it will also be a great creation for legal history in the world.

Now let’s go back to the topic.

The objective and direction of the approved three programs are same in our former three Congresses, that is the “one world of great harmony.” However, these three programs—the theoretical program, political program, and religious program, only describe one world itself, rather than

the means of creating such world. (This is the reason journalists were rejected during the former three Congresses). Take the theoretical programs for example, politicians today are all busy fudging ballots and sparking arguments with each other; scientists today are all busy making their names and creating new words; religious leaders are busy taking followers and raising money. They all believe that the “theory” has nothing to do with them. Indeed the old saying is true: “A scholar is always wrong when he is in front of a gunman.” Now let’s take political program for example, today there are 200 or so sovereign states all over the world, rich and poor, strong and weak, big and small. Most of the countries are subject to the calculations of “distant relatives,” and are detested by “the neighbors.” Hardly does a “world coalition government” seem possible!

Therefore, the theme of the Congress — “The One Hundred Year Plan for Comprehensive Governance of the Global Environment and Ecological Systems” — the natural ecological environment, social ecological environment, human ecological environment, spiritual ecological environment — is the only entrance to the one world of great harmony.

Based on the main document of this congress, “The Appeal”, we can clearly see that: *“We believe that other issues between states, such as issues of racial discrimination, ethnic grievances, territorial disputes, political upheavals, economic crises, the gap between the rich and the poor, religious conflict, and ideological issues, for all these problems, each state has its own situation which is very different from each other, and thus could not agree on unified understanding, unity of action, uniform standards. However, the global ecological imbal-*

ance and global environmental pollution impact every state, every nation, every political party, every religion, and every individual. Therefore, in the name of comprehensive governance of the global environment and ecological systems, all states, parties, and individuals must unite.”

Objectively, as we discussed in “The Plan:”

“[A]ir and land pollution, global climate change, water pollution, desertification, various new disasters and the destruction of epidemics, development of experimental physics and biotechnology, research and development of space engineering, increase in population growth, changes in population density, and restriction of population growth have already obstructed human progress and destroyed human civilization, inhibited progress and restricted prosperity. A state or a coalition of states is powerless and incapable in the face of these ecological and environmental problems.”

In “The Plan,” we also candidly presented a fundamental point to sovereign states: *“With one ocean encircling all of the land, one layer of atmosphere covering the entire planet, one mountain stretching across several countries, one river flowing through multiple borders, ores from one field distributing in markets of various countries, people of one ethnic moving to many countries to settle down, one kind of influenza virus within 4 days can be spread to every corner of the earth, financial crisis of a country within three months can bring disaster to the whole world. Obviously, the problem of ecological and environmental of a “state” is just an appearance, and even a false appearance. The essence of ecological environment is its nature of earth and the nature of globalization. So, if we really want to govern our own country’s ecological environment, we must govern the global environment as the first step.”*

Now that the governance of environment and ecological systems is the only

entrance to the one world of great harmony, then why not put this issue on the first Congress for discussing?

In fact, each theme of the World Congress of Global Civilization and its priorities were determined carefully when OPGC was yet established. This was our train of thought: if the United Nations and governments agree with “The Plan,” then we will encounter the problems of the division of labor, collaboration, funding between countries and so on; we will also encounter the problems of conflicts between environmental governance (such as birth control and monogamy issues) and religions; with the plan carrying on, we will then encounter problems about guiding ideology and theoretical basis. Any one problem above would obstruct and even destroy the great work of global governance of the environment and ecological systems.

Conversely, according to our design, once “*The Plan*” is implemented, when we encounter political difficulties, we will have already prepared political program; when we encounter problems on religions, we will have already prepared religious program; and when we encounter problems of ideology and theory, we will have already prepared a theoretical program.

Yes, we can expect at this moment: once initiated, the huge project of one hundred years global governance of environment and ecological systems (the theme of 4th Congress), will trigger a ground-breaking “domino effect:” first, worldwide consensus; followed by unprecedented resonance across religions (the theme of 3rd Congress); then, will promote the unity of cooperation between religious organizations and gov-

ernments (the theme of 2nd Congress); finally, all countries will be united as once, and this in turn means that mankind has entered the new world called “global civilization” (the theme of 1st Congress). Imagine, isn’t it such a world of great harmony?

Based on this understanding, I wrote this one this topic: a one hundred year plan for comprehensive governance of the global environment and ecological systems is the only opportunity that this world has to enter into great harmony.

Now let’s talk about “the 5th World Congress of Global Civilization”. The theme of that Congress is to discuss and adopt the cultural program of OPGC and confirm the content of Textbook of Global Civilization which will be published all over the world. And there will be two versions of the textbook: one a concise version for the general public, the other an advanced version for academic purposes. We choose the capital of Ethiopia as the site for two reasons. First, we are going to worship ancestors of humankind. Paleoanthropologists and genetic anthropologists have proved that Ethiopia was the birthplace of our common ancestors, so we will take the five programs adopted in five Congresses to worship our ancestors. Second, we are going to swear to our ancestors: since the process of globalization has brought we 7 billion humans, having the same roots, together again, and since scholars of all countries have reached agreements on the theory, politics, religions, environment and culture of human existence, all humankind, as have already become families, will “disregard previous enmity, never fight again, unite with one heart and one mind, and co-build well-being”, which will be shown

by the adoption of the common textbook for all humankind, the Textbook of Global Civilization.

* * *

That are the reasons why we scholars from five continents established OPGC more than a decade ago. And that are the reasons why we the founders of OPGC could never yield in spite of reverses and press forward with indomitable will.

Distinguished guests, ladies and gentlemen:

Generally you may have two questions: what is the to conduct such a comprehensive governance of ecological environment for 100 years? Who would finance this project?

For the first question, Professor Lester R. Brown from the U.S. Earth Policy Institute has conducted the calculation. The conclusion is that: it will be enough and adequate with 2 trillion U. S. dollars a year to make the earth's ecological and environmental recover rapidly, and to resolve a number of major social security issues as well.

For the second question, someone has also made a calculation: if every country could cut down half of its military spending, we can save 1.2–1.5 trillion U.S. dollars every year. Such funds not only could support each one of us, but also could solve several crucial and urgent environmental problems.

Yes, we've got 150,000 years of human evolutionary history, and we have a history of 7,000 years of human civilization. Regrettably, over the past two millennia, there have only been a mere 21 days without war. Let it be for the past, but what we cannot tolerate any more is that there are 200 states on the earth today that are still

sparing no efforts to utilizing manpower, financial resources and energy, to develop more and more advanced military forces which could kill larger amounts of people in more convenient, simple and secretive ways.

Therefore, all representatives from various countries of this congress should express this idea: we hope that political leaders of every state, spiritual leaders of every religion, and academic elites of every discipline, can seriously think about a "moral formula" in which "one plus one = ?" As for a person, no matter whatever he or she has suffered, whether or not it is more ethical to kill a man, or to help them? As for a country, no matter how many reasons it holds, whether it is right to revenge, or to forgive?

Stained with blood from head to toe, pushed on the same boat of destiny by the progress of globalization, we, humankind have indeed arrived at crucial point where "the bitter sea is boundless; behind us is land." Precisely at this moment, humankind encounters the chance for "A One Hundred Year Plan for Comprehensive Governance of the Global Environment and Ecological Systems," which is truly rare for us to have a chance to "turn back towards the land."

Distinguished guests, ladies and gentlemen:

"Older trees have more roots; the old talk much." This letter is already very long.

Once again, I would like to welcome each of you, as well all of your knowledge, suggestions, and insight to the "4th World Congress of Global Civilization!"

Thank you.

November 2013, Moscow



The Global Chemical Safety Problems

Introduction

First of all, we have to define that *chemical safety* is when people and biota do not experience chemical stresses, i.e. the effects of organic, inorganic and organometallic toxicants are at the environmentally safe level, what allows to preserve health of people and biodiversity of ecosystems. These negative toxic (humans) and ecotoxic (biota) effects of many compounds, contaminating air, water, sediments, soil, plants, animals and humans, have been established unambiguously and became (at least, in some of the developed countries) an important focus point within the national strategies of safety. For example, in Japan, Ministry of Environment triggered by the environmental contamination problems, for the last forty years has been carrying out systematically a survey to determine the actual state of pollution caused by toxic chemicals, particularly, by persistent organic pollutants (POPs). The substantial efforts to prevent further contamination of the environment with persistent toxic substances (PTS), including POPs (and more recently with the priority toxic organometallic compounds, mostly organic derivatives of mercury, tin and lead), have been undertaken for the last thirty years in European Union and North America (Canada and USA).

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The specific challenge has been proclaimed from the viewpoint of human health. Particularly, in USA the concept of disease as a manifestation of an imbalance between the environment and the individual has received serious scientific attention since 1990, when the US Public Health Services Agency for Toxic Substances and Disease Registry (ATSDR) commissioned the National Research Council (NRC) of the National Academy of Sciences to explore this challenge in a way that would be understandable to scientists, regulators, legislators, and the general public. The special workshop has been discussing by that time three major topics attempting to answer the following questions: “How do people become exposed?”, “How can we tell that people have been exposed?”, and “What happens after exposure?”

The international efforts are undertaken also to stop the contamination of the environment with organic and organometallic compounds, particularly with the hydrophobic and volatile POPs, as well as with other PTS.

The Stockholm Convention (May 2001) has proclaimed the measures, which will reduce and/or eliminate the emissions and discharges of twelve POPs:

1–8) organochlorine pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene;

9–10) industrial products: polychlorinated biphenyls (PCBs) and hexachlorobenzene (HCB);

11–12) unintentional products: polychlorinated dibenzodioxins (PCDDs) and dibenzofurans (PCDFs).

Another 16 toxic compounds were recommended by the European Working Group of the UNEP experts as PTS to be added to the list of 12 Stockholm POPs.

The list of these compounds has been discussed at the 1st UN Conference on POPs (Punta del Este, Uruguay, 2005):

1–5) Pesticides: atrazine, chlorodecone, endosulphane, hexachlorocyclohexanes, pentachlorophenol;

6–14) Industrial products: hexabromobiphenyl, nonyl- and octylphenols, organolead and organotin compounds, PBDEs, PFOS, phthalates, short-chain chlorinated paraffins;

15–16) Unintentional products: methylmercury compounds and polyaromatic hydrocarbons (PAHs).

The particular problems with POPs and PTS:

- 1) Bioaccumulation in food webs;
- 2) Contamination of air in big cities;
- 3) Contamination of drinking water;
- 4) Negative effects on humans and biota.

Chemical Sputniks of Earth and Global Contamination of Biosphere

According to the definition, introduced by us in 2005, *Chemical Sputniks of Earth* are the compounds, which enter the atmosphere from various anthropogenic sources and perform short and long (including world round) itineraries before being deposited with rain and snow in various regions of our planet.

All three main types of chemicals: inorganic, organic and organometallic can behave like Chemical Sputniks. First, let's see how big are the anthropogenic heavy metal emissions in Europe. They are shown in *Table 1*.

These high levels of heavy metal emissions lead to the substantial depositions of these heavy metals and, as a consequence, to the high concentrations of lead, cadmi-

Table 1. Heavy metal emissions in Europe (t/yr)

Country	Lead	Cadmium	Mercury
France	1190	14.0	36.0
Germany	632	11.0	31.0
Italy	2174	29.9	13.2
Poland	736	55.4	29.5
Russia	2262	49.0	9.4
Spain	944	14.0	18.0
Ukraine	3102	54.0	36.0
United Kingdom	1033	13.0	12.4

um and mercury in the environment. The analysis of the situation with these three important metals is shown below:

Lead: the highest concentrations are in the atmosphere of Central and Eastern Europe (100 ng/m³); maximum levels in depositions can reach 10 µg/l.

Cadmium: the maximum levels of atmospheric pollution are in Poland, Czech Republic and Slovakia (3 ng/m³); the highest concentrations in depositions are 1.4 µg/l.

Mercury: the highest concentrations (660 g/km²/yr) are in the atmosphere and depositions of eastern Germany, south-western Poland, central Russia and eastern Ukraine.

The other sad example is very well known with the radioactive elements, which appeared in the environment (first in the atmosphere and secondly in soils and waters) after the explosion at Chernobyl atomic power station in the Ukraine in April 1986. Very first days the radionuclides were brought with the wind to the Scandinavian countries and were deposited there with the rain. Afterward, when the wind has changed the direction, the radioisotopes were brought to the

Western European countries. And in two weeks, when the wind started blowing to the East, the radionuclides were brought to the eastern parts of Belorussia and Ukraine, and also to the European part of Russia.

We have shown (Table 2), that the endemic biota in the Lake Baikal is primarily contaminated with POPs and PTS, brought to the lake by long-range transfer (LRT) via atmosphere — polyaromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs), as well as water (DDT with metabolites, DDD and DDE).

LRT of PTS can occur by the following modes:

— As a vapor, sorbed to suspended particles or dissolved in cloud water in the atmosphere;

— Dissolved in water and sorbed to sediment particles in aquatic ecosystems;

— In tissues of migratory animals;

— Anthropogenic transport in the form of products and waste.

It has been proposed (Wania and Mackay), that chemical after the deposition to the particular phase without being degraded can be released back into the atmo-

Table 2. Content of PTS in the Lake Baikal food web (ng/g)

PTS Biota	PAHs	PCBs	DDT and its metabolites
Phytoplankton	5030	nd	nd
Zooplankton	7420	nd	nd
Omul'	86	38	nd
Golomyanka	1018	1170	443
Young nerpas	312	1710	2200
Female nerpas	681	12810	7760
Male nerpas	1762	71074	80740

sphere, allowing for a short transport, after which it can be trapped again and the procedure may continue until the chemical is ultimately degraded ("grasshopper effect").

There was an observation on the global scale (Iwata et al.), that the temperature gradients in space in combination with atmospheric mixing favor gradual transfer from warm to cold regions. This can result in higher concentrations of PTS in polar and high altitude regions. We have proposed to call this effect "polar distillation". Wania and Mackay use for this the term "cold condensation".

As to dioxins, it has been shown (Shatalov et al), that the typical levels of PCDD's and PCDF's concentrations in the air of the Mediterranean region are of 1 to 10 fg

ITE q/m³ over land with the highest levels in Italy (13.7 fg ITE q/m³). As to the typical levels of PCDD's and PCDF's concentrations in the aquatic ecosystems, it has been shown, that they are of 2 to 20 pg ITE q/l in the Mediterranean Sea, with the highest levels near the coasts of France and Italy.

Table 3 contents the data on the depositions of some PTS in European Seas. These data were obtained also by means of model calculations.

Chemical Boomerangs and Public Health

According to the definition, proposed by us in 2005, *Chemical Boomerangs* are the compounds, which, being introduced

Table 3. The depositions of some PTS on European Seas

PTS	Unit	Mediterranean Sea	Baltic Sea	North Sea
PCB	kg/yr	1623	715	594
B [a] P	t/yr	30	7	12
2,3,4,7,8-PeCDF	g ITEq/yr	492	65	101
Lindane	t/yr	56	18	26

by people into our life to execute special tasks (for example, to protect plants — pesticides, to exchange heat — PCBs, to retard flame — polybrominated diphenyl ethers, PBDEs), after executing these tasks are returning to the people and affecting negatively their health.

Major sources of POPs and PTS to the environment:

1) Manufacturing (textile, chlorinated chemicals, oil products and catalysts, pulp and paper);

2) Thermal manufacturing (metallurgy, coke, lime, ceramic, glass and bricks);

3) Combustion (coal, oil, wood, wastes, biomass, sludge, plastics);

4) Product application (pesticides, dyes, paints, bleaching agents, PCBs);

5) Recycling (metals, paper, oil, solvents);

6) Waste disposal (obsolete pesticides, ash).

The problem of obsolete pesticides in Central and Eastern Europe (CEEC) and Newly Independent States (NIS) is particularly severe, first of all, due to the overall quantity about 150 000 tons: Azerbaijan: 20 000t, Byelorussia: 7 000t, Bulgaria: 4 000t, Estonia: 8 000t, Lithuania: 4 500t, Moldova: 6 500t, Poland: 60 000t, Russia: 20 000t, Slovenia: 400t, Ukraine: 15 000t.

The PCB releases to air have been assessed with a total emission over 74 tons, while the HCB emissions to air have been estimated to be over 8 200 tons. High values of the PCBs atmospheric deposition have been reported for Baltic Sea (10–15 ng/m²/day). Mediterranean region has similar values ranging from 1.2 to 5.6 ng/m²/day.

Due to the danger of PCBs (carcinogens, endocrine disruptors, dioxin predecessors), utilization of used oils has

to be performed on the basis of modern technologies. The transformers have to be washed and dried, before they can be reused or utilized. The used oils have to be utilized with the environment friendly technologies.

The total emissions of PCDDs and PCDFs to atmosphere have been estimated at the level over 7 tons with typical concentrations from <1 to 14 800 fg TEQ/m³. The releases to soils are in different countries 4–30 times higher. The releases to water have not been assessed across the globe.

Deposition of PAHs is clearly higher than the other reported PTS by 1 to 3 orders of magnitude with the values as high as 5.2 mg/m²/day. The highest values in waters are in coastal and estuarine samples (up to 8 500 ng/L). In sediments the values up to 35.2 µg/kg were found in the southern Baltic Sea. In the eastern Gulf of Finland and in the northern Gulf of Bothnia the values are 17.0 µg/kg and 20.9 µg/kg.

Organotin compounds, mainly tributyl and triphenyl tins, are predominantly entering the environment as antifouling paints for various types of ships and different underwater structures. They are also used as catalysts in some of the chemical technological processes and as the stabilizers for the polyurethane foams. (C₄H₉)₃SnX (TBT) is lipophilic and tends to accumulate in aquatic organisms. Oysters exposed to very low concentrations exhibit bioconcentration factor values from 1000 to 6000. Small doses of TBT were shown to perform the shell malformations of oysters and imposex in marine snails. Large doses of TBT have been shown to damage the reproductive and central nervous systems, bone structure, and the liver bile duct of mammals.

Polybrominated diphenyl ethers (PBDEs) are in production since 1960s and were used principally to flame retard polyurethane foams in furniture, carpet underlay and bedding. They have already been found in high concentrations in marine birds and mammals. Lower (tetra- to hexa-) PBDE congeners are likely to be carcinogens, endocrine disruptors and neurodevelopmental toxicants.

Short Chain Chlorinated Paraffins (SCCPs) are used mostly as a flame retardant in textile and rubber, paints, and in metal working fluids. SCCPs bioaccumulate readily in aquatic species. They have been shown to be toxic for fish and other form of aquatic life.

Polyfluorinated octane sulphonate (PFOS) is widely used since 1948 for protection of fabrics and papers and in fire fighting foams. It is persistent in the environment and bioconcentrates in fish and marine mammals. The half-life in humans is, on average, 8.67 years. An increase in mortality resulting from bladder cancer and increased risk of neoplasms of the male reproductive system and of the gastrointestinal tract has been shown.

According to the UNEP data, the annual atmospheric releases of Hg are about 1500 tons per year, mainly due to the combustion of coal at the electric power stations and the waste burning installations. The biggest amount of mercury is released in Asian countries — about 850 tons. African countries release about 200 tons, European countries — about 200 tons, North America — about 120 tons, Australia and Oceania — about 100 tons and South America — 30 tons. The following ecotoxic effects of mercury have been shown over large parts of Europe: 1) the reduction of microbiological activ-

ity vital to the terrestrial food chain in soils due to the mercury pollution at the 0.07–0.3 mg/kg level; 2) in birds, adverse effects of mercury on reproduction can occur at egg concentrations as low as 0.05 to 2.0 mg/kg. Levels of mercury in Arctic ringed seals and beluga whales have increased 2–4 times in last 25 years.

Toxic effects: methylmercury is the central nervous toxicant, and the kidneys are the organs most vulnerable to damage from inorganic mercury. Significant effects on reproduction are also attributed to mercury, and methylmercury poses a particular risk to the developing fetus since it readily crosses the placental barrier and can damage the developing nervous system.

The maximum allowable level (MAL) of Hg content in fishery products in Europe — 0.5 mg/kg. For most of commercial marine products (anglerfish, Atlantic catfish, bass, blue ling, bonito, eel, halibut, little tuna, marlin, pike, plain bonito, Portuguese dogfish, rays, redfish, sail fish, scabbard fish, shark, snake mackerel, sturgeon, swordfish and tuna) the MAL value is higher — 1.0 mg/kg.

The US EPA's regulations for methylmercury are very rigid: the number of fish meals is limited to one per two months if the content of methylmercury in fish tissue is at the level of 1.0 mg/kg (wet weight).

Concluding this brief consideration of the concept of Chemical Boomerangs, it is important to underline once again the negative effects of POPs and PTS on public health. The most important diseases, initiated by the above mentioned toxicants are the following: genotoxicity, estrogenicity, carcinogenicity, immunotoxicity, neurotoxicity, necrosis, inflammation,

enzyme dysfunction and substrate pool shift, general cytotoxicity and histopathology.

The Paris Convention (1993) and Problems with Chemical Weapons in Baltic Sea

United Nations Chemical Weapon Convention on the destruction of almost 100 thousand tons of chemical warfare has been signed in 1993 by over 150 countries and in 1997 this Convention entered into force.

One of the key issues of this Convention was the safety of the chemical weapons (CW) destruction. This is why the sophisticated environmental monitoring system had to be accomplished at the CW destruction sites, which can be used for real-time monitoring of CW agents, including mustard and nerve gases in chemically contaminated environments.

From the beginning of the development the environmental monitoring has been simply considered as a process of environmental parameters observations, repeated in space and time in accord with the programs, specifically designed for environmental studies with use of comparable methods and data collection. Later on, the monitoring has become to be understood as a long-term standardized measurements, observations, assessments and reporting on the state of the environment with the aim of determination of its status and estimation of tendencies in changes.

The long-term practice in the accomplishment of monitoring as a rigid system by means of stationary observation points and partial separation of monitoring systems from practical demands

in information on the nature protection management activities have resulted in a situation, when in a number of cases the costs of the monitoring realization significantly exceeded the effect from the use of received data. This is why the number of stationary observation points systematically decreased last years.

At the same time there was a tendency to use the term “assessment” instead of using the term “monitoring”, considering assessment as the multi-purpose process for determination of physical, chemical and biological characteristics of the environment from the view point of environmental quality, impact on public health and use of nature resources.

One of the main goals of the assessment is the determination of the long-term trends of environmental quality. Within the problem of environmental quality management the principal role is played by the monitoring system at the local level, which has to meet the following requirements:

1) Comparable information has to be elaborated about the environmental object;

2) The information has to be produced in real or quasi-real time scale with the purpose of operational acceptance of managing measures, including the emergency situations (pollution, etc.);

3) Observations have to be performed both at the level of main-frame monitoring system and at the level of parameters, specific for the particular region;

4) The unified methodological principles have to be used to ensure juxtaposition of information from several sources;

5) The generalized information has to be worked out for maintenance of the databank.

As to the CW agents, it is evident that because of their storage in the specific sites of different regions, particularly in Russian Federation and in the United States, the regional systems of monitoring and assessments play the most important roles, having in mind the specific peculiarities of these regions.

Two basic aspects of the CW agents environmental monitoring were put into the proposed regional system. The first is the necessity of development of analytical methods to determine the small and super small doses of CW agents and their degradation products and to investigate their impact on the biota, including people. This problem has been developed quite intensively within the last twenty years and many important results were obtained, which were used as a basis to develop this aspect of monitoring.

The second aspect is the necessity to elaborate the methods of environmental quality control and monitoring of CW degradation products and metabolites in environmental objects and biological systems. Most of the CW agents belong to the labile compounds and exist in natural conditions very short periods, being degraded under the effects of the environmental factors and interacting with naturally occurring chemicals in soils, water and plants. In some cases the toxicities of the secondary products are higher than the toxicities of the initial agents.

Due to the complexity of reactions in nature and of mixture of the secondary products the environmental quality assessment problem cannot be solved only by means of physical-chemical and biological monitoring.

The expert-analytical system with the task of multifactor analysis of physical-

chemical, sanitary-hygienic, biochemical, microbiological, medical-biological and genetic information, elucidation of primary monitoring data interrelation and elaboration of factors, giving the objective assessment of environmental situation in the region of production, testing, storage and destruction of CW has to be the real heart of the regional monitoring system. The inseparable part of the expert-analytical system is the social-ecological monitoring, directed to the conceptual decision of investigation tasks, working out and implementation of recommendations within the frame of social security of health and safety of population, living in the chemically dangerous zone.

Analysis of the obtained data is elaborated with the use of geoinformation technologies (GIS), allowing the storage, treatment, modeling and visualization of any obtained information. The regional system of monitoring for the sites of destruction of the CW agents has to be based on the experience of industrially developed countries in the creation of monitoring systems for the objects with high complexity of environmental situations.

Chemical Weapons Convention requires the detection and unambiguous identification of 7000 CW agents, their degradation products or related compounds, which have to be treated in an identical analytical manner.

The typical samples are soil, water, air, man-made materials (paint, concrete etc.), munitions or munitions fragments. "Weathering" processes (impact of rain, wind, sun-light, heat etc.) make verification much more difficult, because in these cases the levels of the CW agent contamination could be extremely low and require

sophisticated methods and procedures for identification.

This is why the problem of 302 thousand tons of chemical weapons buried after the World War II in the waters of Baltic Sea next to Bornholm Island looks to be very serious and difficult to be solved, because all the metallic barrels and other volumes, in which they were buried, are supposed to be these days in such conditions that they may already leak and CW may occur in the waters of Baltic Sea. The questions difficult to answer are “What might happen if the leaks will become intensive? Will be there time enough for natural hydrolysis of this CW?”

The problem has to be discussed rather urgently and the regional monitoring system we have discussed above has to be put in operation urgently.

Toxicity and Ecotoxicity of Depleted Uranium

Depleted uranium (DU) is a byproduct of the enrichment process for reactor and weapon-grade uranium. The content of ^{235}U and ^{234}U is reduced from 0.72 and 0.005%, respectively, in natural uranium to 0.2 and 0.0009% in DU; the remainder is ^{238}U (approx. 99.8%).

DU is heavy, pyrophoric, radioactive metal (60% of natural uranium radioactivity), which emits alpha, beta, and weak gamma radiations and has high density (19.07 g/cm^3) approximately 1.7 times the density of lead (11.3 g/cm^3).

DU has a number of civil applications. It is employed in counterweights or ballasts in aircrafts, boats and satellites; manufacturing keels of boats and shields for radioactive sources in tele-therapy units used in

treatment of cancer and in medical equipment, extensively used as radiation beam collimators, or in the production of plutonium; in containers for the transport of radioactive materials, including chemically absorbed gaseous tritium; in chemical catalysis, particularly as nickel-DU material (from 10 to 65% of DU) in the oil and gas industries. DU has also been used in glassware and ceramics (as cooking and serving containers), in the manufacture of badges and jewelry (as the basis of a yellow enamel powder) and dentistry (to obtain a natural color and fluorescence of dentures, and superficial parts of crowns).

The detailed analysis of civil applications of DU showed (Gut and Vitale) that the potential risks of civilian use of DU are such that any spread of this activity, whether research or industrial production, must be defined as dangerous both for the personnel who work, handle or dispose of this material and for the general population. It has been underlined that the long term dangers of low-level radiation as well as the effects of a chemically toxic environment on human immunodefense mechanisms are still essentially unknown, but it seems that there is no threshold effect and therefore any increase above background levels of radiation and toxicity can produce an increase in human morbidity and mortality.

Due to the high density DU is used by the military primarily as armor and as kinetic energy penetrators to defeat armored vehicles. Ordinary DU weapons contain detonating powders, which will explode on impact. Their purpose is to destroy steel-plated tanks from outside, but they are quite inefficient in terms of destructiveness. Unlike steel bullets, which are not able to pierce steel-armored tanks,

DU weapons easily penetrate these arms (tanks, guns, etc.) made of steel (the density of iron is 7.9 g/cm³) and punch a hole through them, burning and destroying the arms from inside, killing as well the combat crew.

Although DU metal is the hardest and densest material of all, one puts around 1% of molybdenum and titanium to DU to make an alloy, which has even bigger hardness. Consequently, DU weapons make a hole in the target 2.4 times deeper than steel bullets. And, DU bullets have to be only 12cm to suite their purpose, while steel bullets must have the length of 30cm. Furthermore, when fired, although DU bullets receive the same air resistance as steel ones, they have less reduction of speed because they are 2.4 times heavier, which gives them longer range and bigger velocity in impacting the target. This is why DU bullets can destroy the target from the distance unreachable for the foe.

Back to 1991, during the Desert Shield/ Desert Storm operations, the weapons, containing DU, have been extensively used by American army. DU weapons as large-sized munitions called “Bunker busters”, which penetrate and blow up hard,

concrete fortifications located several meters below the surface, have been used in big amounts in Afghanistan to wipe out Al Qaeda fighters hiding in mountain caves, and then in Iraq to destroy Iraqi command centers located deep underground. It is said that the amount of DU used in Afghanistan and Iraq is estimated at more than 500 tons respectively.

The quantitative assessment of the DU use in wars (A. Tenner) is shown in Table 4.

The health and environmental risks of the DU weapons. DU presents minimal external radiological and toxicological hazards. Its radioactivity is very low, and the fraction of penetrating radiation emitted per decay (<1%) is small. The data described allow a fairly comprehensive appraisal of the hazards of inhalation and ingestion, but do not allow a dependable assessment of the consequences of internalization by wound contamination or fragment injuries that are of special additional interest to the military.

The concerns of DU shrapnel include physical stresses (mechanical injure and radiological impact) and chemical stress (toxicity of uranium as a heavy metal). The reason, why DU has potential radiological

Table 4. *The quantitative assessment of the DU use in wars (The upper three lines come from official NATO statements; the lower lines are estimates from different sources. Bombs are the main contribution to the total weight; their use increased by a factor five in the consecutive wars)*

Country/DU year	Shells	Bombs	Total (kg)
Serbia/1999	940,000	14,000	400,000
Bosnia/1994–96	11,000		3,300
Iraq/1991	31,000		9,000
Afghanistan/2001–02			800,000 –1,000,000
Iraq/2003–04			1,800,000 –2,200,000

and toxicological impact is its internalization, which more intimately exposes sensitive tissues.

2–5% of ingested, soluble DU absorbed into the blood from intestines. Remaining 95–98% eliminated rapidly. Only about 0.2% of ingested, insoluble DU absorbed into the blood. The fraction absorbed into the blood rapidly cleared, with approximately 90% leaving the body in urine within the first week after intake. The rest will be distributed to tissues and organs. In particular, 10% deposits in the kidneys. Most of the DU deposited in the kidneys eliminated in a few weeks. Another 15% deposited in the bone. DU remains much longer in the bone compartment, to the extent that after 5 and 25 years, a few percent and about 1%, respectively, still present.

95% of inhaled particles greater than 10 μ m deposit in the upper respiratory tract. Most of these clear to the pharynx, and to the gastrointestinal tract. Particles below 10 μ m can reach deeper pulmonary regions (bronchioles and alveoli) and deposit for considerable time. The amount of DU that is absorbed into the blood and deposited in tissue and organs depend mainly on particle size and the solubility of uranium containing particle. This solubility determines how quickly and efficiently the body absorbs uranium from the lung. Soluble chemical forms are absorbed within days while insoluble forms generally take months to years. Toxicological effects are more likely to be associated with the more soluble forms of uranium, while radiation effects are mainly to be associated with the insoluble forms, such as particles that are deposited in the lung and local lymph nodes and retained for extended periods of time. In blood, about

47% of the uranium forms a complex with bicarbonate, 32% binds to plasma proteins, and 20% binds to erythrocytes.

Up to 90% of the dissolved uranium reaching the blood compartment is excreted within the first few days after the single exposure. The remaining 10% deposited in the bones, kidneys and other organs, from where it is mobilized over a longer period of time. About 6.4% of inhaled soluble DU and 0.3% of inhaled insoluble DU is ultimately transferred to the kidney. The kidneys are the critical organ for uranium toxicity. For high acute exposures, precipitation of uranyl-carbonate complexes in the proximal tubules is critical and may lead to impairment of kidney function, which may lead to irreversible damage at very high exposures. Chelating compounds may be used to prevent or reduce kidney damage in such accidental situations.

With regard to toxicity, the occupational exposure level is 0.2 mg/m³. It is unlikely that more than 25% of the DU is soluble or that dust to which people are exposed contains more than 10% DU. On this basis, 0.2 mg/m³ of inhaled soluble uranium corresponds to 8 mg dust per cubic meter, for example, in post-conflict situation.

The solubility determines how quickly and efficiently the body absorbs DU from the lung. Soluble chemical forms are absorbed within days while insoluble forms usually take months to years.

Toxicological effects are more likely to be associated with the more soluble forms of DU, while radiation effects are mainly to be associated with the insoluble forms, such as particles that are deposited in the lung and local lymph nodes and retained for extended periods of time.

The inhalation rate for a standard man is 1.2 m³/hour (10 m³ for an 8-hour working day). The limiting values for the inhaled DU equal to 2 to 2.5 mg/day for insoluble compounds and 0.5 mg/day for soluble compounds.

French regulations state that quantities ingested in a single day must not exceed 150 mg of uranium, regardless of its isotopic composition. The US EPA suggests a value of 3 µg/kg/day as a reference dose (RfD) as the quantity of soluble uranium salts that can be ingested without an appreciable risk of an effect harmful to health. WHO suggested a provisional guide value for uranium in drinking water equal to 2 µg/l.

Current US safe drinking water regulations limit the concentration of uranium in drinking water to 30 µg/l.

Toxicity of DU does not correlate with radioactivity of any particular mixture of the uranium isotopes. Even more, the toxicities of different uranium isotopes are absolutely the same due to the similar electronic environment in these isotopes.

The toxicity of DU is due to the ability of this heavy metal to bind chemically (or biochemically) important targets in the living organisms (DNA, proteins, enzymes, phospholipids), thus creating negative consequences for the health of these organisms.

A severe exposure (of the order of 1 mg of DU in kidneys) causes lesions of tubular cells and deterioration of the kidney function that can cause nephritis or kidney insufficiency. American Nuclear Society fixed the kidney toxicity threshold at 3 µg/g of kidneys, which represents a limiting value of about 1mg for kidneys since the average weight of two kidneys is 300 g. This limiting value corresponds

to exposure by inhalation to 30 mg for very soluble DU compounds, and 250 mg or more for medium soluble or slightly soluble compounds.

It has been concluded (Burkart and co-workers), that the major risk is DU dust, generated when DU ammunition hits hard targets. Depending on aerosol speciation, inhalation may lead to a protracted exposure of the lung and other organs.

However, transfer to drinking water or locally produced food has little potential to lead to significant exposure to DU. Since poor solubility of uranium compounds and lack of information on speciation precludes the use of radioecological models for exposure assessment, biomonitoring has to be used for assessing exposed persons.

How to secure chemical safety?

The United Nations found many years ago the International Register of Toxic Chemicals. In 2005 the European Parliament approved the special program under the title “Registration and Assessment of Chemicals” (REACH), in frame of which 3.2 bln euro were spent till 2011 for registration and assessment of the priority chemicals, which are sold on the European market. There was an assessment showing that REACH will help to save 30 bln. euro within the same period of time due to the improvement of public health in Europe. But, at the end it has been concluded that REACH was not successful enough and the alternative programs have to be considered for solving the global problem of chemical safety.

We believe that if the population of Earth wishes to survive, *The Global Chemi-*

cal Safety Strategy must be elaborated at the UN level with the following *Five Principles of Chemical Safety* as the core of the Strategy:

1) The well known to the experts toxic chemical elements and compounds must be eliminated from the contacts with people and biota (plants and animals);

2) Much more efforts (studies, tests, etc.) must be spent, before any new chemical is finding its way to people and to the environment;

3) The exhausts of chemicals into the environment must be decreased as much

as possible to diminish the amounts of chemicals entering atmosphere, waters and soils;

4) Having in mind the severe problems with chemical warfare of 20th century, people must stop producing any new chemical weapons;

5) Teaching of chemistry at all levels (schools, colleges, universities) must be performed in a way, that the “boomerang” toxic effects of many chemicals, widely used in our life must be obligatory discussed simultaneously with the achievements of basic chemistry.



Theoretical Issues of Interaction between Civilizations



Concept for strategy of mankind's survival in 21st and further centuries

Chapter I. Rod idea of scientific megaproject

The empires of the future are empires of the mind.

W. Churchill

Evolution of a terrestrial form of life which has arisen billions years ago, was accompanied by logic of development of world history: **flora** → **fauna** → **mind, human society** → **biosphere** → **noosphere** — these are main stages of development of life on our planet.

In long process of fight for life of people, human beings started studying itself and world around, learned its laws and to tried correctly to apply them to increase opportunities and satisfaction of requirements. During seven thousand years of development the mankind saved up experience and knowledge to realize responsibility for its future destiny.

In the history there were many crises, the conflicts and wars. But never there was nosuch critical situation when possibility of existence of civilization as a whole would be threatened, and the problem of limitation of earth and resources would demand the scientific decision. Preservation of human civilization, probability of its subsequent successful development are impossible without studying the general regularities and proportions in system production consumption, developments of bases of reproduction cycles and management of global processes.

Sabden Orazyly,

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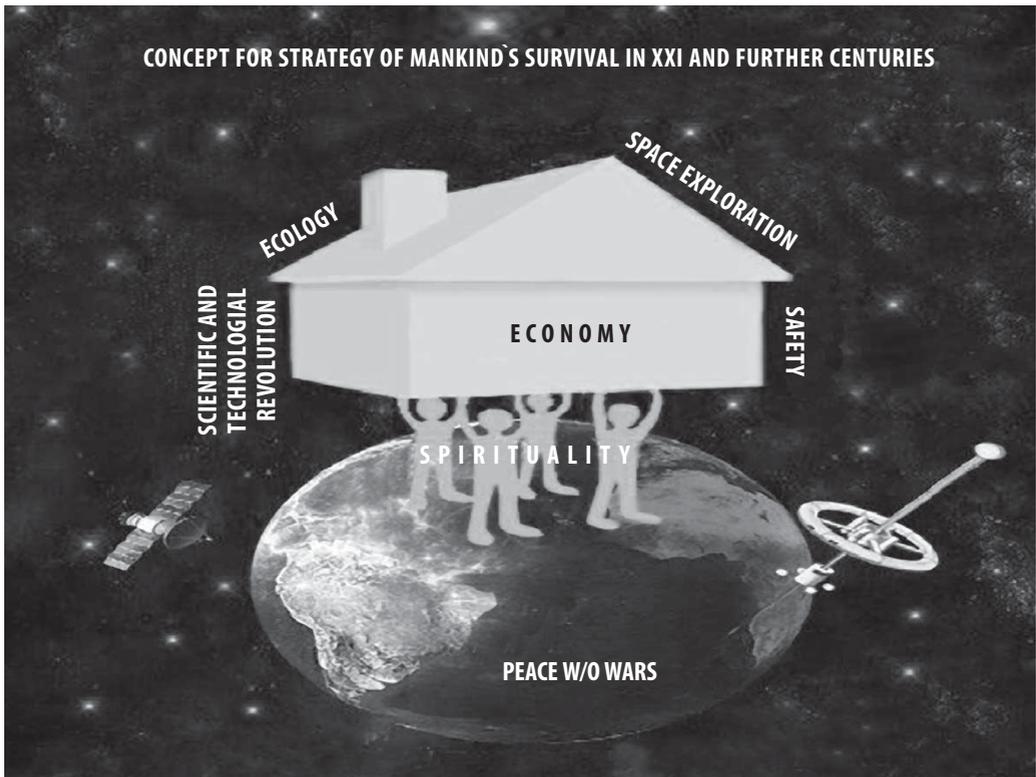


Figure 1. Planetary house of universal civilization for post-industrial world

Need of development of *integrated concept of transition to post-industrial civilization* is proved by prerequisites and conditions of world historical development's formation of logic that all scientists of the world and world community are trying to explain, considering problem from various points of view [1,2,3].

It can be argued that the objective logic of the world's historical development may serve as a reference (standard) and provide the only accurate evaluation criterion to understand the Past, Present and Future of the development of Mankind. Humanity now enters into a period of global transition from an industrial to a post-industrial civilization.

Conventional efforts to overcome global challenges become less and less efficient while a failure to act promptly may lead to unpredictable and irreversible consequences which are potentially devastating for all of humanity. Therefore today, as never before, we must not only have a clear understanding of the causes of the unprecedented imbalance in the global social-and-public development of the present times, but also have a vision to solve the problem of global synthesis, in other words, we must exercise a truly science-based foresight. From these position, the consideration of problem has to be based on contours of constructed *planetary house of universal civilization* (figure 1).

For the first time within conditions of globalization and crises there is an understanding of historical need of coordination of all aspects of scientific and technical, ecological, space, spiritual, economic security as uniform system of providing universal civilization and transition from biosphere into noosphere with preservation of development of the world not only on Earth, but also in space.

The planetary house of universal civilization and the future new waves in scientific and spiritual revolution, will be founded on *combination of six key Basic Elements of transition to post-industrial civilization*, such, as:

1. *Humanization of world community taking into account logic of world history's development.*

2. *New scientific and technological revolution, technological ways (VI-VII-TU).*

3. *Ecology and stabilization of world power consumption.*

4. *Space exploration, space energy and resources of Solar system.*

5. *World safety.*

6. *Transition from market economy to innovative economy for post-industrial civilization.*

Main objective of presented megaproject is development of conceptual provisions on formation of new transitional model to *post-industrial civilization basing on components of transition offered by us to post-industrial world: spirituality, society's humanization (defining logic of world history's development), scientific and technical progress (new scientific revolution), greening of society and a material world (ecological revolution), space exploration, world safety, and also world economic power with all its parameters that are to be provided by steady life in planetary house of universal civilization. Concep-*

tual idea is that more than 200 states on a planet turned to members of one family and peacefully lived under a roof of uniform planetary house of universal civilization (see figure 1). All six Basic Elements of civilization genotype are in first quarter of XXI century endure deep transformation in course of changing industrial world civilization into post-industrial one.

Radical difference of this megaproject is that if before research and results of scientists, geniuses of science, *Nobel Prize laureates* were based on achievements of stunning opening and achievements in certain important spheres, for example *physics, chemistry, medicine and physiology, literature, peacemaking and economy*, in this monograph author for the first time in the world tried to consider on the basis of system approach *all six basic components of transition to post-industrial civilization as unit of interconnected spiritual and scientific process (figure 1)*. Creation and synthesis of fundamental scientific theories in various subject domains of knowledge and *organization of management* of these Basic Elements are only different parties of uniform creative design process of future civilization. Only these theories on basis of uniform development, uniting philosophy, on a joint of sciences and phenomena can give the overall, complete picture of the new civilization world. Thus each making (party) of general house of civilization is considered as a unit and is based on fundamental factors of sustainable development demanding interdisciplinary scientific development with definition of their criteria and indicators. Creation of such house for civilization on basis of causal communication with offered six blocks allows to reveal stability and logic of world historical development in new conditions

of post-industrial civilization. And if as a result of any violation any of six components of the planetary civilization house fails, all the design in what highlight of this idea consists will fail also. Today it is *new system idea* which can specify the exit direction from global crisis and sustainable development.

In figure 1 peculiar “parental” house for all mankind in XXI century where love reigns, care not only on ourselves, but also of general welfare, of happiness of all people on Earth, about life system on planet, based on new knowledge, spirituality, science, creation and formation and reason is presented. Here merge of material and spiritual in human consciousness is traced.

The most important is that the house of civilization is basing on hands of people, on so-called spirituality of human development, and, naturally, everything that of performing — performs for people, for reaching satisfaction and ensuring quality and level of their life. For the first time the thesis that from economical point of view production should be focused not on satisfaction of material and spiritual needs of the abstract consumer, *buton consumption of the specific person*. Therefore indoors on power of economic base spirituality, wellbeing, friendship of the people, harmonious developments of humanity are reigning. And at last, service for reaching future peaks, instead of a mammon, i.e. to wealth is carried out.

If attentively to look at book cover, you can notice that our planet is considered as though from outside – from space. Having rejected local continental conditions, national and social conditions, it is necessary to look at our past, the present and the future from space and at all from

neighbor planet of Solar system, and from the Galaxy. Perhaps, such vision will give large break of an exit from the deadlock. Perhaps, someone from opponents will consider that it is only creative imagination of the author. But, probably, it also doesn't suffice today to us. Here it is necessary to quote A. Einstein: “no one of problems can be solved at the same level on what it arose”. In the future new knowledge, technological novelties will provide us prosperity.

It is necessary to emphasize that within conditions of globalization and crises only *integration ideas*, joint consideration and solution of problems it is quicker achieved success, than the solution of certain states. For assessment of decisions' efficiency the scientific outlook and scientific instrument of coordination of proposed solutions with fundamental laws of nature which aren't depending on the points of view of heads of the states, multinational companies, Masonic, pan-Islamic and other associations are required especially. If world on basis of *planetary cooperation of nations and ethnos* adopts everything achievement which are made still and scientific instrument of coordination of the purposes and solutions of problems with objective laws of nature, it will rescue a human civilization and big assistance to creation of I type of the Planetary civilization will be rendered.

From there is one more macroidea. We want it or we don't want, burning issues of globalization accrue in world as an avalanche, and all can break, demolish that collected mankind for eyelids. As a whole, in expected plan, it is strategic problem therefore it is necessary to solve it step by step and in process of emergence. Today consideration of acute world issues, such,

as climate warming, restraint of armament, danger of nuclear war and other military operations, a demography, hunger and food security is on the agenda. There are also new problems - joint space exploration, forming VI and preparation for VII technological way, power consumption, new financial architecture, world currency regulation, unification of confessional systems, etc. To solve these global macrotasks is not in power with existing international structures and institutes which work long ago. It is necessary to be in time, react to quickly changing changes in the world.

Time came to raise question of *global control system for civilization and regulation by world processes* which in end of XX and at the beginning of the XXI century declared itself before the world community. It to mean it is question of global world system of acceptance political and economic decision. At first stage of global management of world for solution of mentioned address problems it is time to have reasonable conversations on creation of world legislature (world parliament), executive body (the world government), judicial authority (world court), security council, world religious union only with certain powers. Thus it is necessary to make use of all world historical experience of development of humanity, including the UN, EU, G-8, G-20, and also international organizations, institutes, etc. Considering that it is most serious question and there will be many opponents, it is necessary to begin with brainstorming, i.e. carrying out various international conferences, forums, it is similar to world Davos, etc. Statement of such macropurpose to mankind deserved as in course of historical development it

reached such line of global knowledge of world and civilization that can quite put and solve such global problems which face it. For history I want to notice that since when the mankind for the first time left Africa it is passed about 100 thousand years, existed about 5000 generation, but to us to inhabitants of XXI century, to our generation probably destiny prepared to participate in definition of destiny of whole world, i.e. transition to I to type of planetary civilization which can be reached allegedly in 100–150 years. But the main thing is not to be late.

Chapter II. Global challenges and solution to crises

The world of today is undergoing a tremendous change: economic crises, global warming, food shortages, famine and other calamities that lead to complex socio-political changes. Changes of that nature have engulfed the whole world and compel the elites and national authorities to take steps ahead of time to try to avoid losing credibility with the public and to search for new solutions to crises.

The rapidly developing mortgage crisis of 2008 which very soon transformed into a general economic crisis affecting most of the developed economies proved to be so profound that it is now compared to the Great Depression of the 1930s. The unemployment rates soared worldwide; the crisis penetrated the social sphere which produced a negative impact on the living conditions of the general public due to lower incomes and a significant increase in the food prices. All that triggered massive social problems in a number of developed nations, while in many developing econo-

mies of the Middle East and North Africa the same problems were so colossal that they resulted in social revolutions to have overthrown a number of national governments. Experts in the field, however, predict a second wave of the crisis which will affect most of the world's countries and is likely to force 'the world government' represented by the G8 and the G20 to initiate a revolutionary monetary reform to replace the crashed US dollar with a world's reserve currency in order to support and improve the regulatory mechanisms of financial markets, establish a fairer international trade environment and stabilize food prices[4, 5].

Furthermore, natural impacts, *such as the global warming* which is known to cause floods, droughts and the spread of epidemic diseases across the world, raise concern among the world public. It is now a proven fact that by the mid-twentyfirst century the fossil-based economy will have eventually resulted in a global warming. Today people can no longer deny that the earth is gradually heating. Over the last one hundred years the mean temperature on our planet has already risen by 0.7 °C, and this growth now continues at an ever increasing rate. If this scenario persists, the scientists predict that before the end of the century the total growth in temperature will have exceed 2 °C which might be of catastrophic consequences.

Not surprisingly, persistent *social problems and moral degradation*, as well as widespread corruption coupled with inefficiency of local authorities and their indifference to the needs of ordinary people now plague many regions of the world and represent one of the most important factors in catalyzing the atrocities that took place in such regions.

Large-scale corruption with a large diversity of forms and high level of organization, which is especially destructive in developing economies, represents another big hurdle on the way to further development of the international community. This far truly effective means to combat corruption are yet to be discovered.

New global challenges that humanity will soon have to face may be identified by *analyzing the processes* that are presently occurring in the international economic arena, in geopolitics and international relations. The second wave of the global crisis is expected to cause a new economic depression in 2013-2015. Taking into account the cyclical nature of the economic development, a third wave of crisis should be expected in 2017–2019. Then, beginning in 2020, after all the essential innovations for the sixth technological cycle have been developed, the global economy will go into a long upturn. Experts predict that a rapid economic growth leveraged by the new technologies of the sixth techno-cycle will begin in 2025, provided the mankind avoids going into a global nuclear conflict [7]. Such conflict may potentially be ignited between nuclear powers in one of the now existing conflict areas. The countries with nuclear arsenals include the USA, Russia, Britain, France, China, India, Pakistan, North Korea and Israel. The toll of a war between any of them may reach as high as 2.5 billion lives taken in the combat zone as a result of military operations, nuclear attacks and radiation sickness. Another 1.5–2 billion people worldwide would have a severe to medium radiation exposure from contaminated air, water and food. Considering the global conveyor of prevailing winds and water currents, only a few hundred million people will be

lucky enough to find themselves in low-exposure areas. Uncontaminated water and clean food will be a rare and highly valued resource. This may be our possible future.

Even today millions of people worldwide live in poverty, suffer from hunger and hardship. The industrialized countries of the world (we collectively refer to them as the G20 / G8) despite existing plans for long-term national strategic development which all revolve around the idea of earning excessive profits and securing the leadership in the race for economic supremacy are unable to formulate any concrete solution to the protracted crisis persistent in the world's economy. The excessive emissions of the US dollar of the recent years have resulted in the volume of money available worldwide outgrowing the globally produced goods by 10–12 times. The laws of economics dictate that such a huge imbalance will inevitably cause a crisis. Many rich countries of the world have been using the recent advances in science and technology in order to maximize their growth of capital in the name of the only goal — continued enrichment. It is now the ripe time for the world's elites including billionaires and powerful politicians (political clans) to change their attitude and turn their face toward the global community of nations governed by the UN and other international organizations.

In these challenging circumstances, the UN, the International Monetary Fund, the European Bank for Reconstruction and Development and the International Bank for Reconstruction and Development, the European Union and other international financial and public institutions have failed to be efficient. At the same time, the industrial technological development

of the III-IV-V-techno-cycles has come to a standstill. Our civilization must now enter the new VI technological cycle to carry on global economic development through the next several decades (2020–2050).

The stated suggests idea to think of formation of *new global control system* structure by world not to allow global crises, accidents, climate warming, and other negative processes and threats which can lead a human civilization to the end. The following head is devoted to these problems, searches of new ways of development.

Chapter III. Conceptual model of transition to post-industrial civilization (system approach)

World crisis proceeds. The reasons of it are system ones, and are wellknown. Best minds of the world are now researching ways out from current situation. Situation is difficult: certain part of mankind parasitizes, there are earthquakes, warming of climate and other cataclysms, there are water problems, on the one hand, and on another one - billions starve, water and the food are in deficiency, the world is shaken by social and economic, political changes. All of these things are caused by ignoring of objective economic laws, laws of nature of the live environment [8,9].

Now the world is over an abyss, further way of development is in danger... Time of changes in consciousness of people, changes of world psychology, revival of spirituality, moral values has come. It is time to mankind to bring an order in its own house. The challenge is thrown down first of all to developed states (G8, G20), all world community, especially scientific as the science has to give an objective as-

assessment to occurring events and develop the mechanism of preservation and development of life and a sustainable development of the world. In this regard here pertinently to quote UN's General Secretary Ban Ki-moon to "Rio +20" in 2012: "The planet is in condition of unprecedented crisis. We need to recognize that present model of global development is irrational. We risk to doom billion people to life in conditions of endemical poverty. It is necessary to find a new way for advance forward ...".

In the world scientists create and take root into life most various scientific and technical opening. But even to Nobel Prize laureates it isn't allowed to see how these introductions will affect various spheres, first of all natural processes, ecological disasters, accidents, etc. Despite distinctions in existing opinions, this crisis as it was already mentioned is system one [6,10]. Therefore answers should be looked for proceeding from system approaches, integrity, and adequacy of the solution of problems. Humanistic world outlook approach is key approach. In this regard we consider as most priority solution for problems of humanization of society and safety as bases of world order.

In our opinion, it is necessary to change views on market economy, the innovative economy of post-industrial civilization comes after that. It is based on new knowledge, science and high technologies, competitiveness of human capital with all ranges of spirituality upgrading and updating of values' system.

If to consider problem in other global plane, it is possible to notice following. One world schools of sciences, thinkers stood up for control over population growth, others — for observance of doctrines (strategy of eternal life), and the

third suggested to consider strategy of noosphere development. All of them are in own way right. But the world moves on unpredictable way, giving mankind various surprises, and only in these new conditions, entirely considering scientific solutions of all fundamental results and all existing progressive schools, it is possible to come nearer to solution of raised problem. In other words, systemically eliminating world crises, global threats, it is possible to pass to sustainable development.

Modern capitalism, and socialism as well are on threshold of Renaissance's changes. Time of post-industrial civilization came, and space exploration, a noosphere era, an entry into other system of coordinates and values become one of very important factors of development. In this regard agenda of history is *the third way of development of humanity*. It is born on a joint between capitalism and socialism. Conditionally the third way of development can be presented as *transition to innovative economy of post-industrial civilization (innovatsionizm)*. In XXI century, the century of noosphere, break of development of humanity, noosphere civilization of all systems of activity of society on Earth and in space has to be created, there will be innovative and technological breakthrough. For this reason now we make attempt to carry out integration process of all separate scientific and technical, ecological, economic, space and spiritual and humanistic directions and to ensure their safety in the world. Such system approach with use of key elements of development of the world to solution of problems at macrolevel deserves public attention and can be serve as potential idea of sustainable development. It is some kind of complete

adequate method which gives opportunity to solve objectives.

On basis mentioned above, the author made attempt to develop transition concept to post-industrial civilization where all six Basic Elements of transition, i.e., the spirituality, new scientific and technological revolution, greening of society and material world, space exploration, world safety and economy as a whole are systemically considered that as a whole can be provide large break.

Scientific novelty of megaproject consists in complex consideration of all components (i.e. basic components) as uniform world outlook development of global world and on basis of it to development of network model for global control system and regulation by world processes and possibility of preservation of sustainable development of world upon transition to post-industrial civilization (figure 4).

To be fair it is necessary to notice that earlier though very important scientific researches and opening were made, they couldn't provide sustainable development in world because of separation, unsystematic character of world problems' solution. Thanks to scientific achievements we far promoted in some directions, while in others lagged behind therefore there was no balanced development. For example, development of the G-8 and G-20 countries in pursuit of excess profits to please to multinational companies happened without spiritual component of development of the world. It is recognized even by billionaires (B. Gates and others). The author tried to meet this lack, in complex using of all components of transition to new stage of civilization development.

As new knowledge methodology of civilization's development connection of

achievements of natural sciences (STP) with public, society humanization, spirituality, religions in uniform design of planetary house is for the first time shown. Further briefly we will stop on each of six blocks (figure 2).

BLOCK 1. HUMANIZATION OF WORLD COMMUNITY CONSIDERING LOGIC OF WORLD HISTORY DEVELOPMENT

Global changes, world crisis lead to difficult socially and political changes[11]. These changes are like tremors, — occur first in one place, then in other ones. Changes can't be predicted because it can arise worldwide. World crisis forces influential forces of society and those that are in power, to take measures beforehand in order to prevent mistrust of people and to look for new ways of recovery from crisis.

The most essential factor in development of world community are collected for many years social problems, spiritual degradation, corruption, idleness of local authorities, their indifferent relation to needs of people in various regions of world [7]. Many countries, without having accurate state ideology, had lost social orientation and followed a way of thoughtless consumption. The national idea, focused on consciousness of people, is necessary for states,. It has to be based on the principles of nation's unity, development of its language, culture and customs. But the national idea is a not only spiritual phenomenon, it is integrally connected with interests of nation and its' realization. Thus any nation isn't capable to exist separately, in separation from other nations, its interests and separated contradictive interests form other nations. Therefore understanding of national idea, national

interests and mutual trust is indispensable condition of its realization [2].

World religions very poorly protect the population from moral decomposition and crime, don't bear original spiritual revival and a national unification, create only imitation of it. All this influences national security of the world. Though as a whole the religion always played and plays a rod role in attempts to find support by means of which it is possible to move heaven and earth and not to drop out of it. Who will deny that religiousness doesn't do believers happy?

It is probably correct that spiritual representatives of world always first of all put forward ideas promoting *awakening of consciousness*, to its release from stereotypes, and only then recommended to apply technologies improving physical body without which the consciousness can't realize completely itself and exist in a material world. Unfortunately, representatives of developed countries understood it just the opposite. If society's development during number of centuries submitted not so much to reason, but to market relations and private capital. It is time now to trust in power of human reason and spirit, differently — deadly threat.

In an unstable century of globalization the idea about *humanization of society* can become a factor of unification of people and states. After implementation of listed actions by revival and use of centuries-old historical values there will be opportunities of global changes in spiritual and cultural development of mankind. It will be a big step maintaining honor of society not to become stagnation sources. *The main task of humanization ideas is to change thinking of person, his consciousness according to requirements of new civilized society of XXI*

century. A lot of things should be done on settling of disagreements in the world.

Restoration of harmonious development of society and nature in XXI century is possible by elimination of large shortcomings — instead of production and development of not infinite raw material resources and minerals it is necessary to develop the new vision, the new ideas, new projects of development. Projects have to become measures, being urgent. Is vital to *follow laws of historical development* therefore problem of spiritual and cultural development of society has to become a problem of paramount importance.

In answer to question what has to be a new form of society in the XXI century, it is expedient to consider two factors.

First, use of logic (experience) of world-wide and historical development, and also primordial national history, spiritual cultural values of each country and region.

Secondly, new requirements of the XXI century and transition to a postindustrial humanistic and noosphere civilization. As its first stage, acts the development of new technological way. It is necessary to invest capital to innovative technology, to research and development, and to human capital.

All stated above testifies that in world development there comes such moment, the truth moment, when there will be need of elaboration new global strategy of world order. Seems that it is necessary to begin with development *the correct state ideology directed on preservation of moral, spiritual cultural values and traditions*.

Key components of society's humanization and spirituality revival taking into account development of world history are following (see Fig.1):

- *history of past, present and future;*
- *change of world psychology;*

— revival of spiritual and moral values, world religions, including Islam, Christianity, Buddhism, Confucianism, etc.;

— harmonious development of society;

— creative development of human capital in a sharp decrease in the number of people in the world;

— spiritual revolution in XXI century.

The global crisis made us open our eyes. There are many reasons to try to revive high moral and spiritual values acquired by the mankind over the centuries which today so sadly seem to be readily rejected by many. The world once again seeks the ideals of humanism and justice. That being said, fundamental moral standards and spiritual values are the product of the development of human civilization. In the world today we are witnessing public unrest, natural calamities, dictatorships which all contribute to moral decline and the rupture of social ties resulting in a moral crisis.

It is sad that we forget about society humanization taking into account logic of world history, we forgot about need of coexistence under nature laws. But law has chance to work only if it meets ethical standard. Society always has to remember natural basis of the development — the nature. However natural and human capital are not having paramount significance and cultural wealth is forgotten. Therefore laws of harmonious development of society are broken, “the invisible market’s hand” played role, and rich states became hostages of world crisis.

To answer how global problems are to be solved, time came under the auspices of the UN to accept *Concept of new spiritual and ideological doctrine of universal development of the world*. It will provide lifting of spiritual forces of nations and nationalities of the

world and their social and economic progress. Finally there will be a transition to a post-industrial paradigm of spiritual development (see fig. 2).

As an example briefly we will state idea of revival spiritual beginning in one of the Euroasian regions. We are speaking about creation of the *NEW SPIRITUAL and TECHNOLOGICAL CLUSTER “Turkestan Valley”* (it is represented in form of uniting West and East on Great Silk Way of regional model of the world order, new spiritual, technological development and international security). From history it is known that ancient Turkestan which was the spiritual center, took a special place on the Great Silk way.

The main objective of it which doesn’t have analogs in the world of the international national megaproject — to turn Turkestan into the international level spiritual center (megalopolis), to take new step to ensuring the international security. For the first time in history on the example of one region, having coordinated two especially large cardinal problems: on the one hand, spiritual and cultural development of society, from the other hand the new, sixth, technological way — to present to the world new Renaissance model of opportunity spiritually — innovative development [12]. Around large Turkestan settled many countries (over approximately 400 million people may be involved in this idea).

Difference of this project from the *Silicon Valley* in USA is that close coordination of spiritual and cultural development and aul revival according to requirements of new time, with innovative sixth technological way will force it to work for the mankind benefit.

At international level “New Turkestan” will unite West and East and will attract

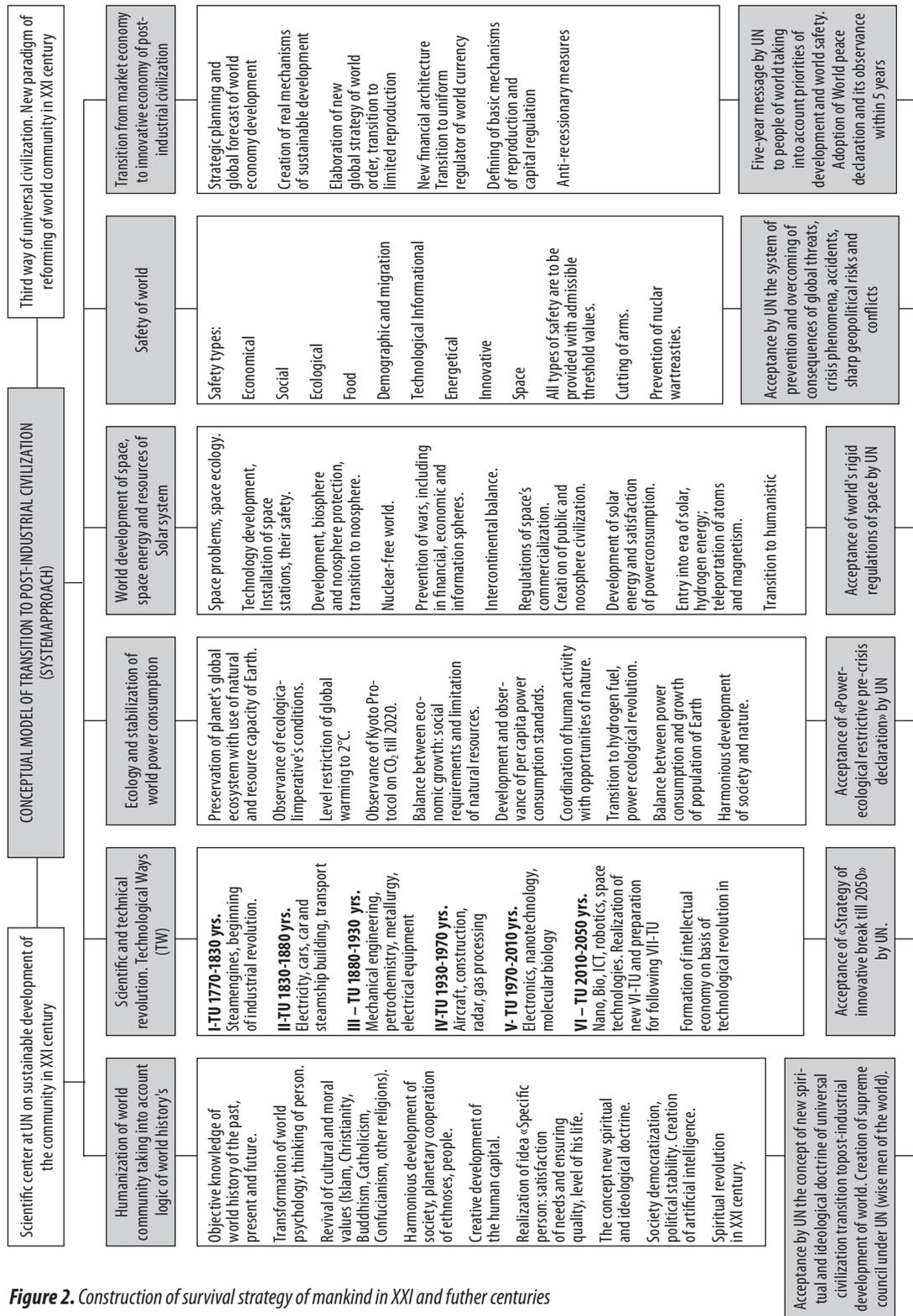


Figure 2. Construction of survival strategy of mankind in XXI and futher centuries

potential opportunities of *Great Silk Way*. With the centuries-old history and culture the project will make changes to spiritual consciousness of people. The unity of society and people will increase, the scheme of sustainable development of the region will be created.

In XXI century new moral will be created, spiritual and cultural institutes as social problems come to forefront. One of them is project of revival of Turkestan in new way. The purpose is not creation of state territory Turkestan, but solution of mankind problems by transformation of it into Euroasian integration center — some kind of new step to ensuring the international security in the XXI century. *Kazakhstan* declares itself as nuclear-free country, though we have richest in the world uranium stocks, Baikonur spaceport and other opportunities to be the nuclear power state.

The most important is that as a result of managing uniform process of coordination of spiritual-cultural development and new innovative and technological way will be provided effective use of most expensive capital — human. Such know-how becomes new push for the whole world. *Differently, in XXI century this project will be courageous step to spiritual revolution in new thought, consciousness of mankind.*

Within project for the first time in center of Eurasia on *Great Silk Way* the new Turkestan spiritual and technological valley will be formed, i.e. there will be a new megalopolis for development (Fig. 3).

Today in the world still there is no such spiritual and technological center focused on civilized development. It is some kind of fearless step to spiritual revolution in consciousness of mankind. The offered megaproject becomes regional model of new spiritual and technological

development of world order and international security.

New Turkestan will turn into Euroasian integration center — a place for cultural wealth of many countries. As a result, unity of society and people as a whole will increase, the scheme of sustainable development will be created. As soon as this regional project will yield the results, its universal use as the Turkestan spiritual range becomes agenda for ideal development of the world. Turkestan as spiritual capital, probably, will be developing under auspices of UN and with assistance of UNESCO, with creation in its territory of these representative offices and offices of other international organizations and institutes. The post-industrial civilization puts in forefront human factor and spiritual sphere. The science, culture, education, health, religion, moral and other universal civilization values define social economic progress for more and more.

Globalization will be shown more strongly in spiritual sphere. It will lead to statement of law, consent and peace in international relations. Sharp reorganizations of spiritual consciousness of people and change of world psychology are necessary. Transition begins with reconsideration of former ideological postulates. For example, from economic point of view, production is to focus not on satisfaction of needs of abstract consumer, but on consumption of *specific person*. Possibly, one of factors bringing to crises is “excessive” consumption. For satisfying today’s requirements of mankind, we need a planet 1,5 bigger than Earth (by ecological organization Global Footprint Network.). To reduce negative influence on nature, each person has to use less meat in food, is more often make choice between car and

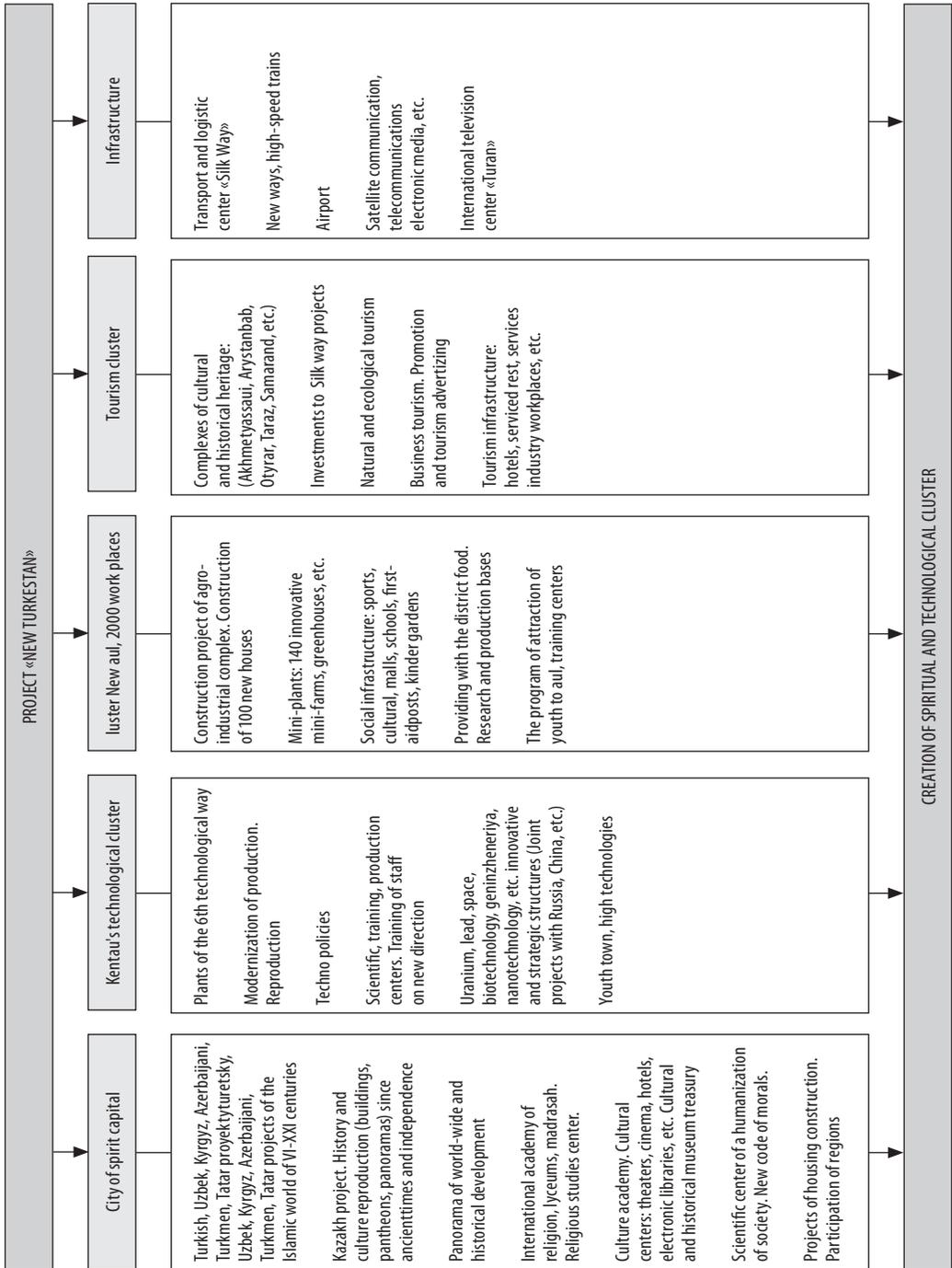


Figure 3. Network model of international megaproject “New Turkestan”

bicycle in favor of the last one and to use renewables.

BLOCK 2. SCIENTIFIC AND TECHNOLOGICAL REVOLUTION

Humanity is now making its first steps into a new, post-industrial socially oriented civilization whose main driver is the progress in science and technology. Most of the developed nations of the world, guided in their endeavor by the Theory of Long Waves, are now completing the fifth technological cycle and are actively engaged in building the foundation for the sixth techno-cycle. The core factors of the next technological cycle will be biotechnologies, nanotechnologies, genetic engineering, information and communication networks, artificial intelligence and space technologies. Innovation seems to be the only appropriate solution to the global crisis, which means developing strategies for innovative breakthroughs through large-scale international development programs tailored for specific clusters.

In the conditions of transition to an innovative economy, it is advisable to modernize science, education and public health to boost the advent of the new technocycle. The above core areas each therefore require a comprehensive cluster program to put all the accumulated knowledge to practical applications.

Later on, after the VI techno-cycle has been fully expressed (possibly by 2050), the global economy will go into the next long-wave technological cycle at a new level of the post-industrial civilization.

Before full development of results of VI technological way this period becomes time of deep geopolitical and geoeconomic transformations. There will be essential changes in structure of our planet popu-

lation. Considering these circumstances, together with states G8, G20 it is desirable for structural divisions of the United Nations to develop joint structure on accumulation of all knowledge of world history's development, to create intellectual product from mankind origin about one today, i.e. to have strongest base of scientific and technical information which will be necessary for development of any megaproject, assistance on development and transfer of new knowledge. It might be correct to consider correct structural divisions of United Nations together with the states G8, G20 *expected scenarios of development of international problems in XXI century* for receiving corresponding decision and anticipatory measures.

The future is in behind intellectual economy, creative opportunities of society, accumulation of value system for post-industrial civilization. On this way superiority will be taken by countries with high intellectual potential developing on basis of high technologies and information base (Internet resources). But also this power won't solve safety of planetary house for universal civilization.

Globalization and world crisis showed that for transition from market economy to innovative economy post-industrial civilization, absolutely new approach needed and *new paradigm of world community's reforming* as well. Even developed states understand it. It seems that reference point has to be on system approach to reproduction process taking into account spiritual, historical, investment, innovative and safe components of new universal civilization. At final formation of VI technological way for scientific and technical progress this situation has to be considered. Balance of world development consists in it.

Innovative break in development of human capital on basis of increasing its competitiveness. The post-industrial civilization puts in forefront human factor and spiritual sphere. The science, culture, education, health, religion, moral and other universal civilization values define social economic progress for more and more. Development of these spheres can't be let ride and furthermore to save at their expense budgetary funds. Favourites are capable of it, but not far-sighted authorities.

Innovative break will be carried out by investments, increasing expenses on health care, science and education which will give new impulse to development of new technological way. In this regard in first quarter of the XXI century it is possible to create new institutes, to revive moral systems and moral values. International organizations and public forces have to favor these changes, differently world by first half of XXI century can choke in fierce social conflicts, as occurs in number of east countries. Only such positive actions of the international organizations will possibly preserve the peace.

Globalization will be shown more strongly in spiritual sphere. It will lead to statement of law, *consent* and peace in international relations. *Sharp reorganizations of spiritual consciousness of people and change of world psychology are necessary.*

Transition begins with reconsideration of former ideological postulates. For example, from economic point of view, production is to focus not on satisfaction of needs of abstract consumer, but on consumption of *specific person*. Possibly, one of factors bringing to crises is "excessive" consumption.

Development of world history shows that mankind reached good results and

progress in its civilization development. It is time to live comfortably though it is known that in the world there are more than 1,2 billion population starve. In this regard it is *expedient to establish the minimum barriers to normal life* and transition to increase of competitiveness of economy in such spheres of human capital, as (see fig. 1):

— *health care (health care financing according to recommendation of World Health Organization has to be not less than 6% of GDP);*

— *science (for normal development of the state, science funding has to be not less than 1,5% of GDP);*

— *education (not less than 6% of GDP);*

— *culture (not less than 5% of GDP);*

— *formation of intellectual economy, creation of artificial intelligence;*

— *realization of consumption ideology of competitive person and his standard of living.*

Only by establishment of such *minimum social and economic standards* (certain standards of life) in the field of the human capital it is possible to provide comfortable life really. Having coordinated minimum standards to growth rates of economy, it is possible to define norms of level and quality of life for developing countries and Third World countries. If these norms provide high rates of economic growth, automatically the standard of living of the population depending on abilities of the personality and competitiveness of each person, the nation, the people and the country as a whole in proportion will raise.

At such approach people will know in advance that without increase of competitiveness of human capital it is impossible to reach a high standard of living. Everyone, at first, will aspire to it, secondly, he will know, on what to it to count. People

won't be submitted influence of various ideologies, religious trends.

As a result of fair approach, to all and each person on planet identical conditions for providing peace and harmony, and also increase of competitiveness of countries will be created. In my opinion, to be very developed and rich country, it is possible to use various methods, effectively to apply both capitalist, and socialist ways of production. Rising of living standard on planet, an achievement of peace and consent on the basis of acceptable ways has to become the main task. At such approach there is an aspiration to alignment of operating conditions of citizens, identical opportunities of abilities manifestation, and also to rapprochement of living standards for various segments of the population of our planet.

World crisis bared negative consequences in sphere of spiritual reproduction, sociocultural civilization, particularly in science and education, culture and moral, moral values. The question is in threat of moral degradation of society. One of the main signs of it is obviously expressed *professional incompetence* in all spheres of human capital, from lowest level to highest one in public administration. Especially it is visible in developing countries. Even developed countries during crisis felt acute shortage of shots on risk management in system of crisis management at international level. Therefore EU during crisis urgently allocated big allocations and began to train qualified personnel in this direction. To it compel proceeding growth rates of unemployment in these countries.

From here *new paradigm about educated society, the person* is born. In conditions of global crisis science and education come

to forefront and become *basis of all system of reproduction cycle*, since birth of ideas and finishing receiving profit for satisfaction of person's needs, and also start of investments for new civilization development. Quality of education, sciences and revival of spiritual cultural values has to be basis of reproduction of modern world community in XXI century. If we want to preserve the peace, then education is to be public benefit instead of as to the market relations that still, unfortunately, proceeds. In XXI century formation total intellectual capital becomes basic task. In this regard it is necessary to reconstruct cardinally all education system, especially in receiving new knowledge that university graduates got at once to sphere of process of reproduction, instead of being unemployed.

All social spheres have to work for spiritual reproduction, reproduction of the human capital that will significantly affect innovative break. Such large divisions of the UN, as UNESCO which have to develop *Universal declaration on spiritual reproduction of sociocultural sphere*, including education, culture, science and health care where it would be possible to establish admissible threshold values to increase competitiveness of economy of the countries have to become chief coordinators in this area. It will be real steps to a new post-industrial social civilization.

Thus, key factors in development of human capital are *investments into people, establishment of social and economic standards, increase in innovation and optimization of people consumption*. UN as the international organization could exercise supervision of performance of these indicators in world countries as regulating and coordinating body for providing sustainable development in the world. For definition of these

minimum social and economic standards and further monitoring at UN, it is necessary to create *World advisory council*. The United Nations expedient to carry out the *5-year Message to people of the world* in which all stated could be reflected. The future of the world depends on development of new paradigm focusing the states of the world and world community on revival and enhancement of spiritual and cultural potential of the world community.

The problem of a world civilization is that *it has to enter again to condition of innovative break on basis of new paradigm for basic development of education, sciences and cultures by powerful investing the sphere. It will be main demand to transition, that is, to the first type of planetary civilization (Figure 4).*

BLOCK 3. ECOLOGY AND STABILIZATION OF WORLD POWER CONSUMPTION

According to some scientists, mankind now is in the first phase of global ecological disaster. But opportunities to avoid ecological deadlock still are, “the nonreturn point” isn’t held yet.

The biosphere of Earth has huge resources which are used by mankind, but are limited and can be exhausted by the end of current century. Mankind closely came nearer “to a non-return point”, especially in development of processes of global ecological disaster. In this regard preservation of our planet global ecosystem with rational use of natural and resource capacity of Earth is especially actual in XXI century. By estimates of some scientists-experts if mankind doesn’t take urgent measures for preservation of planet ecosystem, then ecological death of mankind can already come in XXI century, i.e. on first phase – a phase of global ecological

disaster [9]. As known scientist in the field of the biosphere N. Moiseyev claims, there comes probability of stability loss for biosphere of complete system and, probably, parameters of biosphere will be improper for human life [13].

In our opinion, still in basic and successful states of world and underdeveloped countries local problems were solved one by one, except for some attempts of USA and the former USSR to create balance of forces between them. The powerful USA and USSR provided stability in the world due to equality of forces between superstates. After collapse of USSR, the responsibility for destiny of mankind passes to USA. But, unfortunately, they don’t hurry.

Problems of planetary scale, Earth biosphere and noosphere cooperation of mankind were put seldom. Now, irrespective of states’ status, it is necessary to go on compromise solutions, fruitfully to develop international cooperation to prevent possible catastrophic ecological consequences for human civilization.

Despite rapid growth of NTP, priority role of power will be for long time, until the end of this century. High technologies of future will need enormous quantity of energy. Problems of stabilization of world power consumption which exceeded 10 bln.n.e. become a mansion. [14]. How to find balance between effective power consumption and growth of Earth population, on the one hand, and with nature opportunities – from another hand? It is necessary to come to certain standards of *per capita power consumption* by its decrease and restrictive consumption. Certainly, here it is necessary to apply differentiated approach, to classify developed, developing and lagging behind countries by energy

consumption level, and also step by step to resolve issue of world stabilization of power consumption. All these questions have to be considered in 2015 in Paris and widely be discussed at level of experts, UN working groups with further removal of question at UN sessions.

As for observance of the Kyoto Protocol on CO₂ till 2020, leading countries of the world — USA, People's Republic of China, EU, India and Russia don't carry out it. Therefore time came to take radical measures for reduction of emissions, greenhouse gases to safe level. In this plan neither Copenhagen conference (2009), nor conference of UN on sustainable development "Rio +20" didn't help to solve matter considerably (2012). Probably, first, it is necessary to enter rigid sanctions and tax regulations on CO₂ emissions, secondly, to create *global power ecological fund* and as a whole to stimulate this process.

It is necessary to consider this problem at session of UN and on next meeting and G-20 with connection of world community, politicians, ecologists, climatologists, etc. It is necessary to adopt new convention, obliging to solve two-uniform problems: on one hand, transition to *energy saving technologies* (application of light-emitting diodes, electric car), and from another hand — transition to power based on energy of *renewable sources* (a wind, sunshine, hydrogen and thermonuclear energy, magnetism etc.). Thus consumption of energy will cardinally decrease because lion's share of energy at movement of car and other means of transport leaves on friction force overcoming. Though share of solar energy while is scanty — 0,5%, but its annual production grows for 45%, i.e. in two years almost doubles.

It is planning to implement many solar power stations in world. In this aspect, USA, People's Republic of China and some other countries actively work.

Restriction of global warming to 20 °C was confirmed with UN in declaration adopted by Copenhagen international conference on climate change in 2009. But, unfortunately, even UN — the most authoritative organization, can't actively interfere and is powerless before such world authorities, as USA, People's Republic of China, etc. It testifies that status of UN is insufficient for solution of global problems, and also there is no political will of heads. And when there will come ecological crisis, it will be late to undertake something.

So, conclusion is that considering new conditions of globalization, crises, global cataclysms, geophysical accidents, climate warming, food crisis, transition to new technological ways, and also approach of period of space development and safety in space and on Earth etc., it is *necessary to reform radically in shortest time all UN system, having moved its headquarters on other continent*. For implementation of it, it is necessary to create working group of experts, analysts, independent scientific organizations, strong minds of world for preparation of offers on UN reforming. Perhaps, it is time to create under UN new body — *Supreme council of wise men of world*.

Summing up result, we will note that if we really go to society humanization, need of *harmonious development of society and the nature* for XXI century paramount task in creation of general planetary house of universal civilization (*see figure` 1*). As quintessence of all this we recommend to admit to UN the power ecological global strategy reflected in restrictive pre-crisis

declaration (see figure 2). The era of power economy, i.e. economy of energy for normal, comfortable, safe use by its mankind excluding various accidents and ecological crisis begins.

In conditions of becoming aggravated global crises of UN has to join actively in control process over sources of power ecological resources and their effective use for benefit of all mankind. It is necessary to go for *change of existing model of economic growth*, especially in developed countries, i.e. for decrease in annual world economic growth, investing introduction of high energy saving technology to reduce risk of power ecological crisis.

Very fatal there is exit search from impasse of "Death Valley" by means using noosphere power ecological way of production and consumption of solar energy, hydrogen fuel and energy of magnetism. It will be new paradigm of power consumption, new power ecological revolution of second quarter of XXI century which is based on development of VI technological way. To carry out this revolutionary jump, huge efforts of partnership of world civilization are necessary.

BLOCK 4. WORLD DEVELOPMENT OF SPACE, SPACE ENERGY AND RESOURCES OF SOLAR SYSTEM

Ever since the beginning of the space exploration era, the military circles of every superpower have contemplated military applications for space technologies. *Prof. Vladimir Vernadsky* puts moral values way above material ones, whereas in the reality of the 'technological man' of the present day this value scale is reversed [15].

Humanity will always keep demanding more and more energy, whether of cosmic nature or otherwise, to continue the prog-

ress of the human race going, although our science and technology will not always be ready to provide power in ever increasing proportions. Yet, as we know from history we should expect new discoveries and inventions, such as teleportation of atoms, for instance, that will enable the mankind to make another technological leap forward in pursuit of new horizons and continue its development at a faster pace still. Not surprisingly the fantastic predictions made many years ago by *Leonardo da Vinci*, *Jules Verne*, *Benjamin Franklin* and the *Marquis de Condorcet* now have become an everyday reality. In the nearest future solar power and hydrogen power will dominate the energy balance, while their market share today is only 0.5% of the total human consumption).

V. Vernadsky [15] wrote: "We endure not crisis exciting weak souls, but greatest change of Mankind's thought, time coming true only once during millennium. Standing on this change, covering look the revealing future, we have to be happy that we are fated to endure it and to participate in creation of such future". The huge contribution to development of noosphere civilization was made by following scientists: *I.Kant*, *Zh.Lagrange*, *A.Einstein*, *V.Vernadsky*, *N.Moiseyev*, *K.Tsiolkovsky*, *P.Kuznetsov*, *R.Bartini*, *A.Chizhevsky*. In XXI century noosphere break of universal civilization is fated to be carried out.

In post-industrial civilization land-based sources of energy are exhausted and will be insufficient, and also for ecological reasons will be limited [3]. In these conditions to forefront there is space development, use of space energy and resources of Solar system for deduction of international stability [9].

Earth-based energy sources will have become depleted and will not be sufficient

to satisfy the needs of the post-industrial civilization [15]. Environmental concerns will also put further restrictions on the use of such sources of power. Space exploration with the view of harnessing cosmic energies and tapping into the resources of the solar system will therefore play a vital role in maintaining international stability.

We don't know, whether is and what civilization in space or on other planets. Therefore having get exit to space, mankind as sample of land civilization has to bear with itself intellectual, spiritual and moral, humanistic values adequately to meet possible civilizations of other planets. It is unreasonable to connect sustainable development with continuous use of non-renewable natural resources, but with use of renewables, resources of noosphere it is possible to approach solution of main problem of sustainable development of mankind reasonably.

The time period up to the complete expression of the VI technological cycle will be a period marked by a deep geopolitical and geo-economic transformation. The world's population structure will undergo a significant change. Taking the above into consideration, it is advisable that the United Nations together with the G8/G20 members form a joint institution with the purpose of accumulating all of the historical knowledge on the development of the mankind spanning the time period from the origin of the human race until the present moment, i.e. maintaining the most complete database of scientific and technical knowledge which may be required to implement a megaproject of any nature or satisfy a request for assistance in development and transfer of new knowledge.

In long term formation of integrated sociocultural system and transition to humanistic–noosphere civilization will be result of global civilization revolution. It is necessary to understand that settling of other planets Solar and other systems reasonable beings is main task of people of Earth! Literally in next years, thanks to achievements of theoretical and applied physics start of satellites of new generation intended for analysis of gravitational radiation in space by means of which, mankind will probably open new unearthly civilizations that will serve as beginning of new era will begin. Already “Rosetta” probe successfully functions round the Comet.

The mankind endures turning point of history. It is connected with that existing forms of historical development on basis of personal enrichment of separate groups of people or even certain states, multinational companies, egoistical individualism, etc. sputtered out owing to intervention of natural factors, cataclysms, warming of climate and other factors armed with negative mechanisms of destruction of mankind. It is influenced society stratification, i.e., huge discrepancy between rich and poor sectors of society, by starvation of 1,3 billion people, shortage of water and other basic needs.

Fast development of VI-TU on the basis of what are possible mankind exit during noosphere era, development of space, space energy and resources of Solar system which also need protection and system safety is necessary. Noosphere as object of management of mankind is uncertain full in view of its scientific non-recognition, to mankind is still far before reasonable control of processes in our biosphere and more so in noosphere. If earlier correction

of errors of one mortgage meltdown in USA cost considerable forces and means, the following mistakes can be much more expensive for matter and mankind, up to their destruction.

Development of humanity in XXI century on basis of efficiency, competitiveness of economy has to come to following stage — stage of consolidation, cooperation, socialization and society humanization, i.e. *the joint solution of global problems of interstate, intercontinental, interplanetary balance*. Only such way survival of mankind becomes planetary task –problem of association of efforts of all people of world on basis of mutual respect, principles of social justice, refusal of wars and violence, establishment of general harmony on planet Earth.

Unlike last errors of mankind which occurred before XXI century when hundreds millions lives were lost as a result of wars, accidents and other cataclysms, for now transition of post-industrial civilization to era of noosphere civilization is carried out on absolutely new principles.

The mankind should solve number of problems of planetary scale and to accept number of restrictions by means of international organizations — UN, IAEA, etc. It should create and introduce space technologies, installation of space stations and to develop measures for their safety; to carry out development and biosphere and noosphere protection, transition to noosphere, nuclear-free world, prevention of global wars, including in financial and economic and information spheres, intercontinental balance, regulations of commercialization of space, creation of public and noosphere civilization, power consumption regulation, development of solar energy and satisfaction of require-

ments. All this has to occur under close attention of world community.

In thirties of XXI century when programs of commercialization of space will be developed, when obtaining energy from space it is expedient to reach the agreement of leading countries of world in advance. As there will be pilotless supersonic aircraft, rockets placed in space, it is impossible to allow its militarization to keep human life in space and on Earth. According to J. Friedman's forecast: "by 50th years of XXI century of installation for receiving solar energy already have to be in an orbit. In year it is the share of one kilometer of geostationary orbit of Earth stream of solar energy which is almost equal to quantity of energy containing today in all known developed oil fields of Earth" [23].

In our opinion, transition to noosphere civilization will induce mankind to renounce former stereotypes of thinking, will cure it of egoism, self-interest, will help to return spiritual and moral values.

The noosphere paradigm imposes absolutely new requirements to mankind. First of all, it is spiritual revolution based on intellectual economy, artificial intelligence, society humanization. On spiritual and moral basis sciences, culture, health, high moral and morals, i.e. that we lost will be reached absolutely new quality of education. Therefore, the person as individual is faced with new mission — survival and stability preservation in world. Transition from use of knowledge on enrichment, on success in profit, achievement of self-interested short-term purposes to new knowledge shined with spiritual prosperity of peace life on Earth, transition to new civilization, to great unification of mankind is necessary.

BLOCK 5. WORLD SAFETY

World safety on basis of developing prevention system of global threats, crises, accidents, etc. As development of world history, any achievement in economic, scientific and technological spheres, in space exploration and other spheres not significantly without ensuring world and regional security testifies [4]. World crisis showed that future new knowledge, scientific, information and technological changes, social and public transformation will strongly and quickly change the world. There came an era of global scientific progress where rates of knowledge of the world will multiply increase. According to conclusion of American experts, safety of USA and world as a whole is under most serious, probably, inevitable threat. To great regret, USA goes on imperial way of military escalation. Only direct military costs of country in % of gross domestic product for 2001–2011 years grown up to 64%. Cumulative military expenses of USA made from 1 to 1,5 trillion dollars or nearly 50% of military expenses of all countries of world together taken [22]. Race of arms, militarization of USA, Russia, People's Republic of China and other countries can lead to third world war between 2020–2030 that can potentially destroy everything on planet. If this course isn't changed in time, it is known that expects us in near future is new round of war. Better these huge amounts of money of country would spend for *joint projects* on space exploration, ecology improvement, security measures on fight against climate warming etc. These means need to be used for rescue of general planetary house of all mankind (*see figure 1*). It is necessary to develop mechanism of mutual trust, transparency of realization of such

actions, since ban on applications of all types of weapon of big destructive power before general disarmament for world establishment without wars. For example, if contract on restriction and regulation of streams of uranium enrichment isn't signed soon, especially about control of new technology, in particular behind laser uranium enrichment, nuclear bombs of third generation can fall even into hands of terrorist organizations. Considering that planetary economy arises, economy of new knowledge, instead of race by arms has to be new criterion of development of superstates.

Enormous force terrorist attack is prepared by environment. Climatic revolution on threshold. This accident is much closer, than it was possible to assume, and in the next 20 years it will be costs life to million people [16]. Certainly, not all experts share these belief, but fears are also problem very actual.

If global crisis comes, all mankind will be irrevocably lost. Won't rescue neither high fences of owners billionaires, nor police, neither army, nor milliard investments on arms which do USA, Russia, China, etc. It is possible not to allow it only with civilization's rescue, having reconsidered views of mankind.

In this regard the safety problem is considered by us as complete system from economic, social, ecological, innovative, food, demographic, scientific and technological, information, power, space and other types of safety. Only complex safety will yield steady result (*see fig. 2*)

These settled types of safety are rather investigated and approved [15, 17]. Therefore experts of the UN should develop the basic principles of safety, maximum permissible critical values and indicators

characterizing every type of national security. Because of limitation in volume we will consider further specified indicators on an example only with economic, social, demographic and ecological safety.

Economic safety — state of economy and public institutes at which are provided guaranteed protection of national economic interests, the effective, socially directed development of country as a whole and sufficient economic potential even at most adverse option of development of internal and external processes.

Principles of ensuring economic safety of state:

— *focus, interaction of subjects of economic safety, scientific justification of ensuring economic safety, continuity of actions — in time and in space, legality*

Problems of ensuring national economic security:

— *timely forecasting and identification of external and internal threats of economic safety;*

— *ensuring equal and mutually beneficial cooperation of the state with other states of the world;*

— *increasing level of competitiveness of domestic industrial output on basis of investment and innovative activity;*

— *increasing level and quality of population life of the country;*

— *maintenance of branches being base of expanded reproduction, for population employment;*

— *creation steady financial system which is equitable to interests of real economy, etc.*

The indicators characterizing production sphere and its extremely critical values are following:

share in industrial production, %	
— manufacturing industry;	70
— mechanical engineering	25

the volume of investment into fixed capital, % to GDP	25
depreciation of fixed assets, %	40
share in export of manufacturing industry, %	40
labor productivity (thousand dollars on one worker in prices and at par purchasing power), %	27,9
— to the average world	142
— to the developed countries	50

Financial safety is characterized by stability of financial system of the country, stability of national currency at maintenance of real exchange rate providing competitiveness of national economy, sufficiency of volume of gold and foreign exchange reserves, maintenance Active balance of balance of payments and creating favorable conditions for steady and high rates of economic growth.

The indicators characterizing financial safety and their threshold values are as follows:

rate of inflation, %	15
the volume of an external debt, % to GDP	25
share of external loans in covering budget deficit, %	30
budget deficit, % to GDP	5
the volume of foreign currency in cash to volume of cash national currency, %	25
monetary weight, % to GDP	50
gold and exchange stock of the country, % to GDP	not less than 20
internal public debt, % to GDP	no more than 75

Balance of payments deficit, %	no more than 50
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Basic principles of ensuring financial safety:

- ensuring stability of economic development of the state;
- neutralization of impact of world financial crises;
- ensuring stability of payment and settlement system;
- prevention of large-scale leakage of the capitals abroad;
- prevention of crimes and administrative offenses in the financial sphere;
- attraction and use of foreign loans on the most optimum for national economy conditions;
- stimulation by means of taxes the development of important types for the country (economic activity, branches, regions, etc.).

Social safety is characterized by condition of security for population which is provided with lack of high unemployment rate, degradations of personality, the social conflicts, low level of social tension in society, availability of education standards, health care, culture, science, improvement of food quality and living conditions.

The indicators characterizing social safety and their extremely critical values following:

gap between the income of 10% (most prosperous population groups and 10% of the neediest, times	8
Jeanie's coefficient (degree of deviation of actual distribution of monetary income from their equal distribution between inhabitants of the country)	0,3
population share with income lower than the size of a living wage, %	7

share living less than for 2,5 dollars in day	0,5
share of homeless and other socially declassed groups of % to total number of population	1,5
unemployment rate on methodology by Labor ministry, %	5
human development index, points	0,800
crime rate (quantity of crimes on 100 thousand people)	1000
alcohol consumption level on the person in year, liters	8
number of suicides on 100 thousand people	20
level of prevalence of mental pathology on 100 people	360
share of the people consuming drugs, %	3,5

Basic principles of ensuring social safety:

- carrying out independent and socially focused economic course;
- ensuring reproduction of social activity of protection objects (person, society, state);
- ensuring protection of moral principles, customs and religious life, intellectual and information security;
- providing in the territory of the country of a personal security of the person and the citizen, his constitutional laws and freedoms;
- strengthening of a law and order and preservation of socio-political stability of society;
- timely forecasting and identification of external and internal threats of social safety of the country;
- fight against terrorism strengthening, drug business and smuggling.

Demographic safety — ability of social system safely and steadily to function on the basis of population reproduction as

process of continuous renewal of its number and structure through alternation of generations.

The indicators characterizing demographic safety and their extremely critical values are as follows:

Birth rate coefficient on 1000 ppl.	22
death rate it the people on 1000 people	12,5
coefficient of natural increase on 1000 ppl.	12.5
migratory gain of people on 1th. people	1,1
share of migrants, % to numerical structure of the population	3
average expected life expectancy at the birth, years	75
conditional coefficient of depopulation	1
general coefficient of birth rate of population (average number of children born by woman for all life), ‰	2.15
coefficient of population aging, %	7
demographic loading of the disabled population on able-bodied, %	60

Main objectives of ensuring demographic safety:

- *improvement of social and economic conditions of population activity;*
- *stage-by-stage providing and improvement of state minimum social standards in field of compensation, provision of pensions, educations, health care, culture, housing-and municipal service, social support and social service;*
- *optimization of external and internal migratory streams of the population;*
- *counteraction of illegal migration;*
- *formation of high spiritual and moral standards of citizens in field of family relations, increase of family prestige in society;*

— *ensuring reproductive rights of citizens and assistance to formation of high reproductive requirements of population.*

Ecological safety — set of measures, for protection of personality, society and state from possible or real threats which grow out of anthropogenous influence on environment, and also from natural disasters and accidents.

Critical values for indicators of ecological safety:

total receipts from ecological payments, % to GNP	5
ecological losses to GDP	5
nature protection costs of ecology, % to GDP	5
volumes of emissions in environment of polluting substances	-
the saved-up quantity of radioactive waste demanding deactivation, special processing and long storage	-
the areas of degraded lands, %	20

Basic principles of ensuring ecological safety:

- *safety priority for life and health of personality and society as a whole, universal values before any other fields of activity;*
- *presumption of ecological danger of any production economic activity;*
- *state and public supervision and control of ensuring ecological safety.*
- *allowing procedure of production and other activity, capable to create threat of ecological safety of population or territory;*
- *obligation of state environmental and sanitary and epidemiologic examination of all construction projects, reconstruction and productions of any production;*
- *state support of actions for improvement of habitat of person;*

— organization of system of the state environmental monitoring of condition of surrounding environment;

— ensuring full, reliable and timely knowledge of citizens, establishments and the organizations about threats of ecological safety;

— publicity for plans of activity implementation, capable to threaten ecological safety of population, society or environment;

— broad participation in international activity in field of ecological safety;

— observance of the Kyoto Protocol.

In this way experts of the UN can show the basic principles, tasks, indicators, and also threshold values, on ten spheres of safety. Further the UN could recommend them to the members for order observance in the world.

BLOCK 6. TRANSITION FROM MARKET ECONOMY TO INNOVATIVE ECONOMY OF POSTINDUSTRIAL CIVILIZATION

As it was specified earlier, prospects of development of world economy contact formation of *innovative economy* which can be considered as most important direction of development of world in the XXI century.

Founder of modern concept of innovation is Y. Shumpeter [18]. Competition represents main instrument of economy of resources and efficiency growth, one of driving forces of development of society as a whole.

It is known that classic theory of “comparative advantages” was introduced by D. Ricardo [19]. Further this idea according to stages of development of economy was developed by M. Malt liquor [20], J. Stiglitz [5] and other scientists of the world.

Globalization and world crisis showed that many theories, including a Keynesian one and monetarism, are right only at cer-

tain assumptions and revolution waves. Paying tribute to views of these scientists, founders of innovation and competitiveness, in practice in pursuit of excess profit world multinational corporations controlling more than half of world gross domestic product, often forget about other components, for example about human factor, moral, spirituality, sharp stratification of society, society greening etc.

In scientific researches of global intercountry competitiveness development of WEF (WorldEconomicForum), international institute of management and development (IMD, WorldCompetitiveness-Yearbook, Lausanne, Switzerland), the Harvard university (in particular, M. Porter), etc. are allocated.

Life quickly changes therefore in conditions of globalization and world crisis of model by M. Porter in view of objective reasons have no that strong impact what they had earlier. There were new economic laws, and other forces started influencing markets and to transform them. Keys of world economy were transferred to small group of financial oligarchs, Federal Reserve System of USA (belonging to 20 private banks of USA), to international multinational corporations, international financial organizations, including IMF, WB and other Countries — “Big seven”, “A big 20”, largest world organizations, including UN, NATO, Euro Council, practically neglected world economic processes served by dollar and already uncontrollable issue of “modern currency”.

Now world is puzzled how to return missed how to resist to world call of crisis how to equip house of universal civilization, etc. (*see figure 1*).

At heart of market system of managing spontaneity of development lies. But

mankind seeks for consciously operated process of all economy, which eliminates subjective roots of market economy. It has to be objectively caused, consciously pushed transition to new system of coordinates of economic life, blossoming of civilized economy. Civilized economy is necessary to world, and it has to become basic principal for creation of all economic processes and all reproduction cycle.

In this regard our task consists in bringing at least scanty contribution in civilization development. Therefore block VI is devoted to the most pressing question of competitiveness of world economy. First of all, without repeating former mistakes, it is necessary to deal with strategy of world development the world: where we go, where us conduct? It is thought, ourselves don't know where we go, and what conduct us don't know.

For first time United Nations still in the early nineties put forward idea of sustainable development. But on way of performance of planned purposes there were certain difficulties, also world crisis of 2008 had negative impact.

The ability to forecast future developments in geopolitics, ecology, socioeconomics and determine strategic priorities for the world's economic development to ensure *sustainable growth* has become a prime concern since the crisis of 2008 [10]. On the pathway towards a sustainable economic growth *long-term projections* are not just a possibility, but rather a necessity for setting long-term objectives and determining their fulfillment strategies. Unfortunately, this far *no reasonable strategy for the development of the world's economy in the context of ongoing globalization* has been offered. Global mechanisms of strategic planning remain rather underdeveloped.

Today, in addition to futurological concepts more and more long-term science-based forecasts become published for 30–50 years into the future [11]. For instance *The World in 2050* (2006), a forecast by Pricewaterhouse Coopers, and *Dreaming with BRICs: The Path to 2050* [Wilson, Purushothaman 2003] by Goldman Sachs, the forecasts made by the Club of Rome, etc. The most appropriate tools to model global developments are represented by qualitative methods and structural models describing socio-economic processes. Mathematical macro-modeling must be exercised as a method of long-term computer modeling detailing the dynamics of the world's socioeconomic development [17].

It is advisable that the United Nations place an international order for the development of *the Concept for Strategic Planning of the World's Global Socio-Economic Development* with large interdisciplinary research teams and corporation (Fig. 4).

Too many researches are devoted to world financial crisis. Without going into details, we will note that among scientists and experts there is an opinion that it is necessary to *find uniform regulator of world currency* that will make possible to plan a ratio between world production, consumption and a monetary covering, goods and services. It would be possible to observe main mechanisms of production and capital regulation therefore new financial architecture will be developed.

We made attempt to prove approaches to definition of *uniform universal measurement of currency for whole world in form of "power", i.e. relation of kilowatt to currency — kW/currency.* It will allow to get rid of speculative capital not provided with real power [21]. Briefly the essence of this question is in the following:

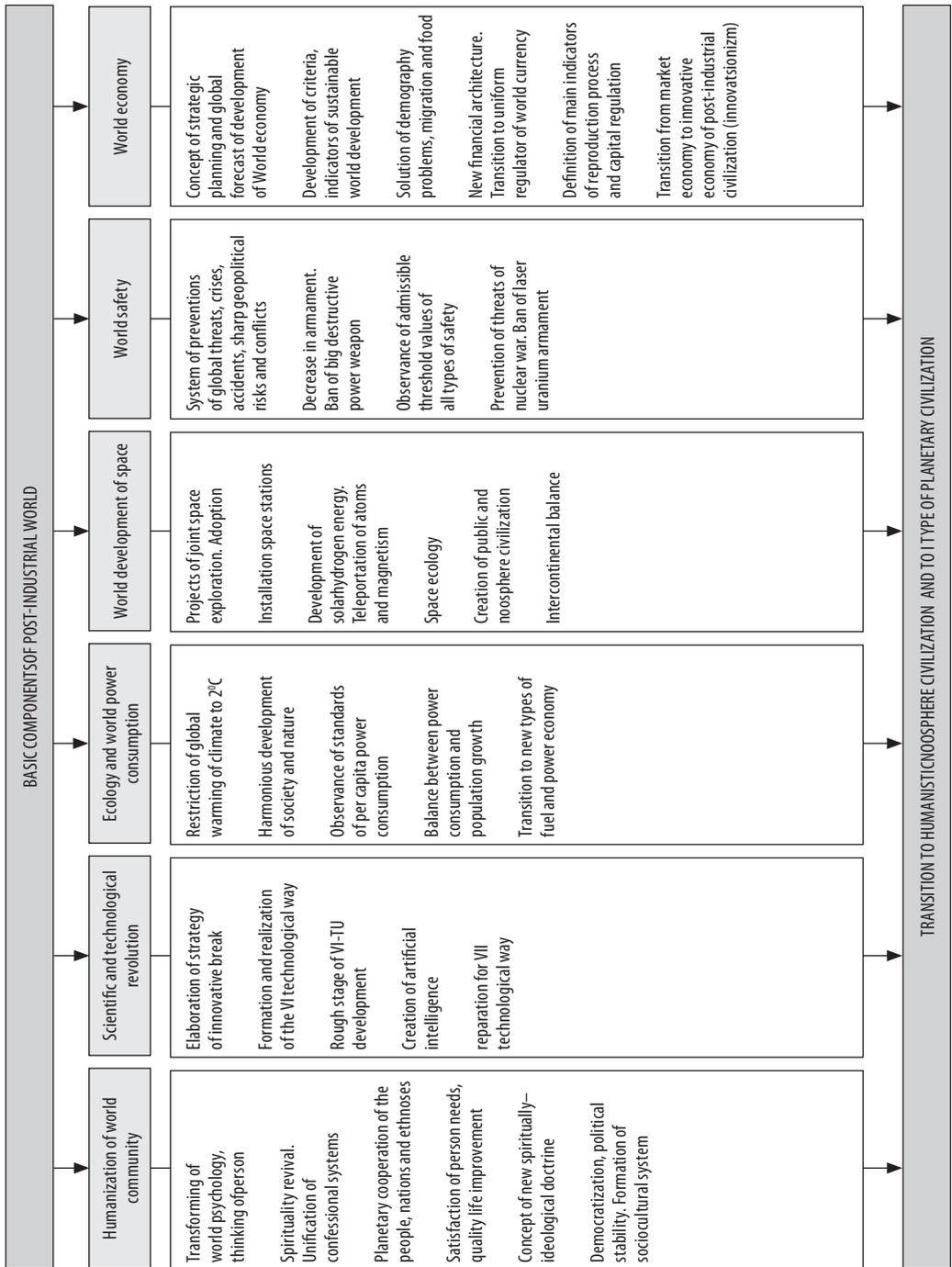


Figure 4. Network model of global control system and regulation by world processes

Modern calculation of gross domestic product in dollars is incorrect from coefficient point of view for recalculation of various currencies. The power unit (for example, kilowatt) worldwide can “cost” different size in various currencies, but kilowatt both in Africa, and in America, both in Europe, and in Asia remains in kilowatt and therefore can and has to be used for establishment of exchange rate of currencies.

For this purpose we will present number of columns in *table 1* (the countries, the population, economic opportunities): for Europe we will express the gross domestic product column in Eurozone currency, for USA — in dollars, for Russia — in rubles, for Kazakhstan — in tenge — and we will add one more which will express the cost of 0,1 watts in national currency. For simplicity of consideration we will take integrally Europe, USA, China, Russia, Kazakhstan and Belarus. Economic opportunities are gross domestic product of the country expressed in gigawatts.

We tried to make calculation of economic opportunities of some countries, and then and fullness of national cur-

rencies of these countries in watts. Economic opportunities represent sum of power works power on the generalized efficiency. It is gross domestic product of countries expressed in gigawatts. Similar calculations can be carried out over any country of the world.

The algorithm of calculation of equal (fair) exchange rate “costs” of any national currency of world looks as follows:

1. We determine country power in watts (through electricity consumption, fuels and food).

2. We define Sq.m Unit (“quantity of money in economy”). We set filling of ruble, dollar, euro, tenge, etc. in watts. Forexample, 10 watt =1 ruble/tenge.

Thus «sovereignty» of country isn’t limited to any obligations. For example, to let out X money in economy, instead of Y. But at trade operations between countries coefficient of recalculation of currencies will be connected with kilowatt. It somewhat return to when currencies had real filling by gold, now this filling by power on basis of power conservation law. *For gold standard no physical conservation law existed.*

Table 1. Economic opportunities of some countries in 2012.

Country	Population, mln. ppl.	GDP, Bln.U \$	GDP per capita, (US\$/person)	Economic opportunities, GWt	Price of watt power, US\$	Dollar support, watts
USA	313,85	15 497,3	49 378	1117,2	13,87	0,72
EU	503,8	16 190	32 136	834	19,41	0,052
China	1343,2	8 280,0	6 165	1286,1	6,44	0,16
Russia	138,1	2 015,0	14 591	307,1	6,56	0,15
Kazakhstan	17,52	203,520	11 616	27,7	7,35	0,14
Belorussia	9,54	63,27	6 632	12,5	5,06	0,2
Ukraine	44,85	176,3	3 931	52,4	3,36	0,3

We established size of monetary weight (Sq.m) as ratio of size of cumulative opportunities of country to «gold number» F (Fibonacci's number) = 1,618033989 «The gold number» is certain constant, ideal for development of object, system or process. We see that estimates will be coordinated with Che. Montesquieu's statement (1689–1755) that «financiers support state as rope — hanged man».

If states don't cease to follow stupidly in waterway of «world prices» and won't pass to intelligent regulation of cost of exported production, failure of their economy will be inevitable. Liberal market showed insolvency and susceptibility to crises of cyclic character. Eventually World bank and IMF impose to countries rules of management of economy. International organizations which could assume responsibility on reforming of world financial system, give in and show full lack of will or simply don't want to lose powers on «management» of world economy, protecting interests of one and infringing upon interests of other countries. Now we need to be engaged in this task closely.

We recommend to create *Single currency union in the world*, with the following key tasks:

1. The basic rules of existence of currency union have to consist in attachment of currency *not to one certain good*. It is necessary that this currency contained force, power. Besides, as such a currency, the currency of any country shouldn't be accepted to depart from temptation of emergence of predominating state dominating in world economy at request of which there can be crises or wars. Creation of world currency as dollar or euro is doomed to failure of all currency systems.

2. New currency can't be tied to *basket of leading world currencies* as issue of any currency by all means will lead to issue of other currencies that generally and is confirmed now when additional issue of US dollar conducts to issue of currencies of other countries, including European Union, Japan, etc.

3. At trade operations between countries, the coefficient of recalculation of currencies has to be *connected with kilowatt*.

4. Provided that *as an equivalent power will be taken*, it is necessary to calculate security of currencies with real assets as which in our case power acts. It is supposed that such approach will give chance of transition from free to equal trade as in world practice free trade has, first of all, speculative character.

5. We believe also that control of monetary weight (Sq.m) could be exercised by authorized intergovernmental body on the basis of the corresponding international treaties.

6. In case of crisis it is necessary to create *intercurrency reserve fund*.

In summary we will note that UN in new quality has to control “cost” of all currencies of the world (*filling by power*), and not to allow formation of currencies which haven't been provided with assets. In this regard at United Nations it is necessary to create expert currency commission which would carry out examination of ratios of all currencies of world and their security with power.

Instead of conclusion

1. On a question where we go, it is possible to answer that only world community joint efforts can preserve mankind

from global threats, death. Race of arms of USA, Russia, People's Republic of China and other countries, separate progress of world multinational companies, tries of G8 and G20, such international financial organizations as IMF, World bank, WTO, large regional EU, NATO, BRIC, SCO unions won't solve problem of global world challenges though they and do much. Therefore came to unite, correct time to world all negative that did, mankind, there are no two ways about it.

In transitional stage it is necessary to begin with the status and reform of UN and others international organizations. Considering new paradigms of development of world in the conditions of globalization, it is necessary to transform radically to shortest time UN system, having moved its headquarters on other continent. For this purpose formation and scientific public council functioning on sustainable development of world be required at UN, creation of supreme council of wise men of world, organization of Executive secretariat of group of experts of world including all continents and regions of planet (at UN), etc. And main thing to create world organization (with WTO status isn't lower, than IMF, World bank, etc.) at UN dealing with only global priority problems like world financial crisis, warming of climate, danger of nuclear war, food security, space exploration, etc. The circle of tasks is set by UN and G8 and G20. Council of wise men at this organization is settled by sformirovaniy tasks in the UN, G8 and G20.

At this organization it is necessary to create the world reserve fund financing only joint global projects.

2. Formation of new structure for global control system by the world. Development of a medium-term / long-term global

roadmap to the World's sustainable development.

3. Development of global warning systems to predict and mitigate global threats, crises, technogenic disasters and natural calamities, severe geopolitical risks and conflicts of social, political, astronomical, technical, and environmental nature, etc.).

4. Development of criteria and indicators for the international system to monitor the progress of sustainable development with multiple factors.

5. The Annual Report on the World's Sustainable Development. The five-year address of the UN to the People of the World prepared inclusive of the development priorities of the G8/G20 shall bind all the signatory powers which are member states of the UN to observe the World Declaration for the period of 5 years. This would become a new unifying idea, the very leverage and mechanism of peaceful coexistence and sustainable development in the difficult conditions of the global civilization. For objective reasons the key role in managing the processes of global integration belongs to the United Nations.

In the light of the above, the world needs a new strategy for the development of nations customized to factor in necessary crisis response measures and mitigate challenges and threats of the modern world (the so called *New Policy*).

In order to form the ideological model for a step-by-step development of the world the following must be taken into consideration:

1. Up until 2020 we may expect to witness more crises in the politics and economy, turmoil on the local and global scale caused by conflicts, wars and natural calamities;

2. We are observing the advent of a new global multipolar system. Multipolarity will require a more equitable distribution of wealth between the nations and *a transformation of international institutions, such as the United Nations, the International Monetary Fund, the World Bank, etc.* which are now mostly dominated by the interests of developed countries, while the interests of emerging economies are under-represented. We must therefore work to establish a global economy with a minimal level of risks and uncertainty;

3. The world today is in need of megaprojects designed to *improve the standard of living*. Governments of industrialized nations should go beyond the narrow interests of their respective countries and begin to invest in programs aimed at raising the labor efficiency in *the world's poorest nations*.

4. Over the last few years geopolitical and socio-economic *forecasting* have been on the rise again due to global environmental and energy challenges and a significant decline of food availability caused by the considerable *growth of the world population*;

5. Humanity is now undergoing a global demographic revolution which is characterized by an exponential growth of population to be soon replaced by a *restricted reproduction*.

We are confident that *the new doctrine aimed to further the development of the global human society based on the ideals of morality and spirituality* championed by the United Nations and all the prudent forces of the global community, as well as *the UN Address to the People of the World made every five years* will provide the essential theoretical guidelines for human communities worldwide and sovereign nations to examine

and assess their policies of the past, present and future. This will be a new step toward understanding the pattern of the development of the human society in the XXI century.

The United Nations, therefore, now have a unique opportunity to regain its role and mission as a global unifying force which will be the core for *the new architecture of historical, moral, cultural, technological and environmental constructivism* founded on the principles of justice, harmony and cooperation in the best interests of all the peoples of the world and the universe. It should be an institution like the UN to fully accept the responsibility for the future evolution of the human civilization. This will be the next revolutionary step in the direction of global security in the XXI century.

By 2015 next stage of strategy of world development, designated by UN will end, and stage of transition into new stage from market economy to innovative economy of the post-industrial civilization based on new knowledge, science and high technologies, competitiveness of the human capital with all ranges of lifting of spirituality and updating of system of values will begin. And let this scientific megaproject will bring certain contribution in new strategic development of world.

In order to test the proposed concept it would be advisable to hold in 2015 a UN world conference titled "The New Strategy for the World's Development in the XXI Century". In the context of the XXI century it has become an urgent necessity that the United Nations initiate a systematic analysis of the political, environmental, socio-economic and possibly some other aspects of the development of the human civilization in order to promptly work out common principles for the future development

of our species on Earth and take immediate action regarding the pressing challenges of the present day, such as managing the climate change, etc. In the present conditions characterized by high levels of uncertainty we need to have at least a certain degree of confidence in our vision of Tomorrow. *Taking into account the above we believe that the author should be allowed to make a presentation on this problem at relevant agencies of the UN, in particular the UNESCO, etc.*

The proposed megaproject may today become the driving force to unite all of mankind. This is another civilizational challenge for the humanity! World religions, such as Islam, Judaism, Christianity, Hinduism, Buddhism, and their respective schools shall never endorse any public discord or terrorism (the way they constantly appear to be portrayed by the Western media) but urge for the unity promoting high standards of ethics and a secure development of the human society. In other words, it is a step forward toward a moral revolution of the mankind. This megaproject offers the ideological basis for developing the global human society and securing international security by way of leveraging high moral standards and technological progress.

Proceeding from stated above, I address to UN, G8 and G20, to annual World Davos forum to consider the offered megaproject.

In summary I want to note that I worked for that life of people on our planet become be more safe and happy. If time confirms my correctness, if ideas of this project will attract readers, if any of them influence improvement of surrounding life or at least will give scanty impulse of transition to I type of Planetary civilization divide, I worked not for nothing. (Figure 4).

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Yu.V. Yakovets.
Dialogues about Regularities
and Ways to Recover from Crises



Crisis wake scientific thought. The decuman wave of crises that hit the planet at the beginning of the 21st century has become the impetus for the formation of a new branch of knowledge — crisisology. Its cornerstones were laid as far back as in the 19th century.

In the 20th century its basic laws and postulates were formulated.

In the 21st century a building of new science got its articulate look in the writings of the leader of the Russian cyclicism school — Professor Yu. V. Yakovets.

He has formulated the concept and algorithm for prediction of crises and the path to recovery from them. In 1999, this problem received a fundamental coverage in the monograph “Cycles, Crises, Forecasts”, in 2003 in the brochure about economic crises. In 2004, it was published the idea of innovative partnership; in 2012 — the law of socio-political partnership in crisis situations.

This book, written in the form of a dialogue with a representative of the new generation, includes new approaches to the the-

ory of recovery from crises on the basis of innovation-based and socio-political partnership as well as a social law formulated by Pitirim Sorokin. The role of leaders of the new generation in overcoming the crisis and establishment of the humanistically-noospheric integral civilization is disclosed.

The book is aimed primarily at the leaders of the new generation. But also at the representatives of previous generations who have come to a standstill in the face of crisis shocks of the beginning of the 21st century. It can be used at the Open University for dialogue among civilizations, higher and further education systems.

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Paradoxes and Prospects of Civilizational Dynamics

Four Paradoxes of Global Dynamics

At the beginning of the new century the world of civilizations has suddenly faced with four paradoxes that call into question the continued existence of this world, the future of humanity.

1. Unidentified global object. From the end of the 20th century the planet is hit with the decuman wave of crises rapidly changing each other that did not fit into the usual understanding of the crisis phases of medium- (approximately ten) and long-term Kondratieff (approximately half a century) cycles.

In the 1990s, unprecedented in its length and depth the crisis hit the Eurasian (USSR) and Eastern European civilizations; in 1998 it spread to the “Asian tigers” — the new industrialized countries of South-East Asia.

In 2000–2001, a new world information crisis broke out mainly hit the developed countries. In 2008–2009, the global financial and economic crisis combusted and also became the first (but not last) crisis of neoliberal globalization under the control of transnational corporations. The ratio of world trade in goods and services to the global GDP fell from 65.3% in 2008 to 54%. It is burst a considerable number of “bubbles”, so that the ratio of market capitalization of firms to global GDP fell from 121.3% in 2007 to 85.2% in 2009. It was the collapse of the late industrial economic system. Simultaneously with the tragedy of September 11, 2001 it is unfolding a geopolitical crisis, the global core of which is the conflict of civilizations.

No sooner had the world recover from the crisis of 2008–2009, as in 2012–2013 a new wave of the crisis unfolded, the epicenter of which at this time are the Western European and Eastern European civilizations, united in the European Union.

Such an acceleration and deepening of the crises stumped not only national and international policymakers and business leaders, but also scientists, based on the industrial paradigm of social sciences. There is no well-founded diagnosis of the global disease; therefore, there cannot be trusted recipes for its healing. International organizations and governments are struggling with the consequences of the crisis, not understanding and healing its roots. Some leaders began to say about the fundamental unpredictability of crises that afflict the planet like earthquakes or volcanic eruptions, although the scientific basis for predicting crises is known since N.I. Tugan-Baranovsky — for 100 years.

There is nothing more dangerous than the position of a rabbit in front of a boa, admission of own helplessness in front of the wave of crises.

2. *Blind leaders and dangerous healers.* The second paradox follows from the first. In the book of the Serbian satirist of the late 19th century Domanovic “Stradija” (Land of Tribulation) it is published the story “Leader”. Its essence briefly is in the following. In a state of disaster people gather in the square to find the way-out. The eloquent leader is convincing them that he knows the way to salvation. The crowd believes him and follows him. Thickets are ahead, the leader confidently powers through them, and the people suffering make their way through the wild forest. They come to the edge of the cliff — and the leader boldly steps to the abyss. It is followed by a part

of the crowd, and the survivors discover: and the leader is blind!

Such blind leaders who do not understand the essence and implications of all ongoing crises, but offer to follow them, are many multiplied. And each of them is gaining adherents and followers, heading in one direction and then the other of the main road of progress.

This becomes particularly threatening, when dangerous healers prevail: the decision-makers at national and international level become bold leaders. A striking example is the policy of the “Three” — the International Monetary Fund, the European Union and the European Bank during the current European crisis. Having forgotten the lessons of Marx that the periodic renewal of fixed capital (technology factor) lies at the heart of crises, the lessons of Roosevelt, summarized by Keynes, on the need first of all to deal with unemployment, mass impoverishment and decline in domestic demand, not stopping at deficit financing — these dangerous healers advocating the priority of reducing the national debt and the reduction of inflation, with a perseverance worthy of a better application, pursue the anti-Keynesian policy, moving the burden of the crisis made by them to the most of the population and especially young people. They are persistently preparing a social explosion, destroying over half a century ripen idea of European integration, the European confederation, because it will die, unless supported by the majority of the population. Such dangerous healers also prevail in the economic block of the Russian government. The Chinese leadership holds the opposite positions, in fact the Keynesian.

3. *Kingdom of crooked mirrors and the kingdom of “soap bubbles”.* Overcoming the crisis

is complicated by the fact that late industrial modern economic system is both the kingdom of crooked mirrors and “soap bubbles” that does not give the possibility to evaluate adequately the crisis processes and means for overcoming them. World prices have ceased to reflect the ratios and dynamics of resource spending and serve as criteria for the effectiveness of decision-taken and economic activity. An example may be the dance of the oil prices, which seems insane, but quite manageable. Market competition has long been replaced by the dictatorship of the monopolies and multinationals. Generally accepted performance indicators — GDP and GNI (gross national income and gross domestic product) are a distorting mirror, a share of parasitic market services is bloated there and a share of material production and social services are understated.

In this kingdom of crooked mirrors the dynasty of “soap bubbles” reigns — especially transnational corporations and international financial centers that suck the capital out of the process of reproduction and accumulation for speculative actions in the stock markets, bursting on a periodic basis in times of crisis with global foul-smelling and disasters for hundreds of millions of people. In 2007, the ratio of market capitalization of firms to global GDP reached a record level — 121.3% (against 48% in 1990), but as a result of the crisis fell to 85.2% in 2009 (30%), in 2010 was up to 88.7%. It is formed a kind of virtual global “shadow theater”, where it is played enthusiastically about 30 thousand of listed companies with an average size of capital 910 million dollars (2011). However, behind this game it is a speculative redistribution of wealth between countries and social strata, following the fluc-

tuations of the exchange situation. This is a global club of billionaires, who rules the fate of the world economy. It has little in common with the world of market competition of unequal producers, the rules for which are derived by Smith and Ricardo. It is rotten right through a parasitic system of the late industrial economic system which has outlived its time, has become a fetter on the path of the economic growth and science and technology progress, it is doomed to descent from the historical stage in the birth pangs of the new, integral economic system — socially, environmentally and innovatively-oriented.

4. *Total professional incompetence.* Its way to the society of knowledge, of which so much is said and written, humanity began with entering the society of ignorance, with the phenomenon of total professional incompetence. The point is not that knowledge is not enough — the number and percentage of employed with secondary and higher education is widely increasing, especially in Russia: graduates with higher education per 10,000 employed from 1980 to 2009 increased from 53 to 215 — four times (while the training of skilled workers over the same period decreased from 191 to 80 to 10 thousand employed — in 2.4 times) because the new generation is armed with knowledge that meet the conditions of the 20th century, and it is necessary to live and work in a radically changing world of the 21st century. Hence the unique phenomenon as the spread of professional incompetence: workers, especially the DM (decision makers) — Government officials, political leaders, top managers — do not understand the essence, direction and implications of the ongoing changes and often take the wrong strategic decisions or do not take

long-term strategic decisions at all in fear of the future (a phenomenon that Alvin Toffler called future shock). Power — political, governmental, and economic — is more and more detached from the advanced science and willingly accepts the neo-liberal position: let all go as it goes, it is not worth for the state to interfere in market processes. This is the position of a rabbit in front of a boa, which aggravates the painful crisis processes and makes it difficult to exit from them.

Four Rays of Light at the End of the Tunnel

However, all is not so bleak and hopeless as it may seem. Modern Russian scientific schools forming a new scientific paradigm that meets the realities of the 21st century, relying on the strong shoulders of their great predecessors (Vernadsky and Nikita Moiseev, Pitirm Sorokin and Nikolai Kondratieff, Alexander Bogdanov and Nikolai Berdyaev), in alliance with like-minded people from other countries — offer their vision of regularities of changes in the nature and society, their vision of the future of society and the ways of movement to it. What are the distinguishing features of this new vision?

1. *Crisis open the way to the renewal of society*, a new turn in the history spiral. Joseph Schumpeter described the crisis as creative destruction: breaking predominant, but obsolete, doomed - they open the way for the creation of new, progressive. Crises are never endless: completing one historical cycle, they open the way for a new turn of the spiral. Performing the destructive function of breaking obsolete, braking the development of society, at the same time they open the way for the emergence and spread of the new already conceived, re-

new and enrich the genotype — the heritable core — economic, technological, social, and political systems of any level. Moreover, we can talk about the energy of crisis: a crisis frees society from complacent inertance and short-sightedness and awakens in progressive scientists, inventors, politicians, and businessmen desire to find a way out of the crisis, ingenuity and willingness to radical strategic decisions and actions. As the Russian proverb says: a pike lives in the lake to keep all fish awake.

The decuman wave of global crises beginning of the 21st century, evokes the great energy of the implementation of new strategic decisions, is the impetus to a radical renovation and improvement of all the systems that make up the complex structure, the initial stage of a wave of global transformations, opening the way for a new turn in the history spiral. That is the approach of modern Russian scientific schools (Russian cyclicism, civilization, noosphere, innovative, integral macro-forecasting), standing on the position of a mongoose before a cobra position: knowing the essence of impending disaster — boldly and ably to strive for their awakening, to overcome crises.

2. *The civilizational nature of the crisis*. But for the success of such position it must first make a science-based diagnosis of the crisis, determine its historical place. And the answer to the fundamental question about the nature of the crisis is unambiguous, though not simple: it is a crisis of civilization. It has a complex structure that can be seen in three dimensions.

First, it is a crisis phase of super-long civilizational cycles — to replace the industrial world civilization that has done its historical period and exhausted its

development potential (the beginning of which was laid by the industrial revolution of the end of the 18th – beginning of the 19th century) it comes next, seventh (if you start counting from the Neolithic Revolution of the 8th millennium B.C.), world civilization. We do not call it the post-industrial (this is an inaccurate description), but integral humanistically noospheric civilization whose contours are still being formed.

Second, it means a radical realignment in the world of local civilizations. In place of the fourth generation (16–20th centuries) with the dominance of the Western civilization it has actually come a more differentiated and active fifth generation, comprising of three civilizations of Europe (Western European, Eastern European, and Eurasian), three recently split from the Western civilization of America and Oceania (North American, Latin American, and oceanic) and six ancient civilizations of Asia and Africa (Japanese, Chinese, Indian, Buddhist, Muslim, and African). It comes true the foresight of Pitirim Sorokin and Arnold Toynbee on the movement of the center of creative activity from the West to the East. One can add — and to the South, referring to the Latin American civilization. At the forefront of the evolving integral civilization it comes China, India, and Brazil; in the rear guard — the U.S., Western Europe, and Japan (the so-called triad of modern world leaders).

Third, it follows from the civilizational nature of the global crisis, the need of balanced and synchronized transformation of all six components making the genotype (the heritable core) of global and local civilizations: natural-ecological and demographic, technological and economic,

geopolitical and socio-cultural. All of them are now hit by deep crises: energy-ecological and food, demographic and migration, technical and economic, socio-political and geo-political, crisis in the socio-cultural area (science and education, culture and morality). Hence it follows the need for a long-term strategy of concerted transformation of all the components of the genotype of civilization across all global and local civilizations.

3. *Noospheric crisis*. The third feature of the diagnosis of the current global crisis is that this is a noospheric crisis, realignment of the interaction, foundations of co-evolution of nature and society.

Civilization was born ten thousand years ago with a purposeful human use of natural resources to his advantage — with the emergence of farming, cattle husbandry, and construction. Each new step in the history of civilization was characterized by the involvement in the process of reproduction, development of new natural productive forces: the steel industry and irrigated agriculture, the forces of wind and water, steam energy, liquid and gaseous fuels, electricity, and nuclear energy. And it was a natural basis for a new stage in development. Now the situation is changing radically: the world is approaching to exhaustion of certain natural resources and environmental catastrophe.

4. *The crisis of the global community*. The world is inexorably globalizing. And the matter is not only in the economic, technical, information, and migration globalization. The main thing is different: the crisis has spread to all the sides and components of the global civilization and can be successfully surmounted only on the basis of a concerted and effective global strategy, concerted actions of the global

community relied on scientific thought as a planetary phenomenon as a historical, biological, geological force.

It is not realized so far. Tendencies that rather dangerous for future, prevail. The tragedy is in a growing gap between the pace of the changes taking place and their awareness and appropriate response to them on the part of both national and world elites — both political and economic. The competence of the existing global institutions and their response to the ongoing and upcoming changes are inadequate. At the Summit, 1992, at the decline of the previous historical period the strategy for global sustainable development, supplemented at the Summit RIO+10 in Johannesburg and Conference RIO +20 in Rio de Janeiro, in many ways does not meet new conditions of world development that have drastically changed. The efforts of the leaders of “G-8” and “G-20” are mainly aimed at the partial improvement of outdated world orders rather than at the development of a long-term strategy that meets the realities of the 21st century.

However, the situation is beginning to change here. Through the efforts of scientists from Russia and other countries forming a new paradigm, it is developed and represented at the UN headquarters on 27.10.2009 a new vision of the future world — Global Outlook “The Future of Civilizations” for 2050. Based on this forecast it is prepared and represented at the United Nations (28.06.2011) and at the 4th Forum of the UN Alliance of Civilizations (11.12.2011) and at the 6th Forum of Civilizations within the UN Conference RIO+20 (12–17.06.2012) the scientific foundations for a long-term strategy for global sustainable development based on partnership

among civilizations. In 2013, it will be finalized the report of the International team of scientists to the Summit “G-20” (Saint Petersburg, 5–7.09.2013) “Scientific Foundations of the Strategy for Surmounting the Crisis of Civilization and Entering the Path of Global Sustainable Development” (discussed at the 7th Civilization Forum in Moscow 10.04.2013).

The ruling and business community has not responded so far to the vision of scientists (with a few exceptions — Russian Foreign Ministry and President of Kazakhstan support their initiatives). But the crisis quickly teaches even most sluggish. And most importantly — a process of change of generation has begun, in the coming years the gravity and responsibility of the adoption and implementation of strategic decisions in the national and global scale will pass to the leaders of generation of the 2020s. Let us hope that they will be more receptive to the vision of scientists.

Six Steps to the Future

To successfully overcome the crisis of civilization, and entering a new turn of the history spiral appears it is necessary six inter-related consecutive steps. Three of them have already been passed in the last two decades (from 1992), three more are to go within at best the coming decade, by RIO+30 (2022).

Step one can be dated to 1984, with the publication of the monograph “The Regularities of Science and Technology Progress and Its Planned Use”, my report “The Establishment of a Post-industrial Civilization” at the International Scientific Conference dedicated to the 100th birth anniversary of N.D. Kondratieff (at the discussion “Kondratieff Cycles and the

Future”) and publication in Russian and English the monograph “At the Origins of a New Civilization” (1993). The report and monograph formulate the foundations of a civilization-based approach to the past and to the future of humanity, determine the content and prospects of the establishment of a new world civilization.

These provisions have been further developed (including with the use of geocivilizational, reproductive-cyclical macromodel) in the monographs “The History of Civilizations” (1995, 1997), “Cycles. Crises. Forecasts” (1999), “The Past and the Future of Civilizations” (2000), “Globalization and the Interaction of Civilizations” (2001, 2003), and six-volume book “Civilizations: Theory, History, Dialogue and Future” (2006, 2008, 2009).

Thus, it is created a fundamental basis for a new branch of scientific knowledge — civiliography, finding the regularities and outlooks of the dynamics and interaction of civilizations, developed a methodology of diagnosis and prediction of crises and ways out of them, defined the content of modern civilization crisis and prospects for its overcoming.

Step two. On the basis of established fundamental backlog in 2008-2009 it was developed, published in 10 parts, and reported at the United Nations headquarters in October 2009 and at the World Expo 2010 (in Shanghai) Global Outlook “Future of Civilizations” for 2050. This forecast reflects a methodology for integral global macroeconomic forecasting, the results of the situation analysis of the dynamics of civilizations and the identification of critical situations, a long-term forecast for six components of the genotype of civilizations — energy-ecological, demographic, technological, economic, geo-po-

litical, and socio-cultural. The cumulated volume — “The Future of Civilizations and the Partnership Strategy of Civilizations” — is reported at the round table within the 64th session of the UN General Assembly on 27.10.2009 and at the 4th Civilization Forum at the World Expo 2010 in Shanghai.

Step three was to develop on the basis of a long-range vision a long-term strategy to overcome the crisis of civilizations on the basis of a wave of epochal and basic innovations. This step was validated in the monographs “The Epochal Innovations of the 21st Century” (2004), “Russia-2050: a Strategy of a Innovation Breakthrough” (2004, 2005), “Russia-China 2050: a Strategy of Co-development” (2007), “The Strategy of the Faster Growth of Russia in the Global Crisis” (2010), “Global Economic Transformations of the 21st Century” (2011) and the reports of the international team of scientists “Foundations of the Strategy for Global Sustainable Development based on Partnership of Civilizations” (2011), which were presented at the Round Table within the 65th session of the UN General Assembly (28.06.2011), at the 4th Forum of the UN Alliance of Civilizations (11.12.2011), at the 6th Forum of Civilizations at the UN Conference on Sustainable Development 13–17.06.2012.

As a result of such step a long-term strategy for global sustainable development on the basis of civilizational and noospheric approach, dialogue and partnership of civilizations received scientific development and discussion.

It should be noted that the proposed strategy by scientists was supported in the writings of the President of Kazakhstan N. Nazarbayev — the monographs “The Strategy of Radical Renewal of the Global

Community and Partnership of Civilizations” (2009) and “Global Energy-Ecological Strategy for Sustainable Development in the 21st Century” (2011).

Step four. Now it is time to make the next, fourth step — bringing the vision of scientists to the world leaders, the embodiment of their ideas in international documents.

To the Summit of “G-20” in St. Petersburg it is presented the draft report of the International team of scientists “Strategy for Surmounting the Global Crisis of Civilizations and Entering the Path of Global Sustainable Development” (2013). The draft report will be finalized taking into account the deliberations and suggestions of the team members, translated into English, published, posted on the Internet and distributed among the participants of the Summit.

The Organization for Promoting Global Civilization (permanent chairman — Chinese scientist Zhang Shaohua) has prepared a draft plan for environmental enhancement. It will be discussed at the 4th World Congress of Global Civilization “On the Way to the Noospheric Civilization” (Moscow, December 2013), finalized, published in Russian, English and Chinese languages and submitted to the United Nations, the leaders of “G-20”, the governments of the countries of the world. Let us hope that the proposals of scientists will find understanding and support from world leaders.

Step five. However, the practical implementation of scientific recommendations for overcoming the crisis of civilizations on the basis of a wave of epochal innovations and entering the path of global sustainable development based on partnership between civilizations will begin when

these recommendations will begin to be embodied in international instruments of “G-8”, the UN system, international associations of states and civilizations. This will require, along with the development and approval at RIO +25 summit (possibly as part of the World Exhibition EXPO 2017 in Astana) of the global strategy for sustainable development, the implementation in long-term strategies by components of sustainable development.

Making and adoption of such strategies, programs and projects for their implementation, as well as similar strategies on international and inter-country associations and unions (CIS, Eurasian Economic Community, the European Union, SCO, BRICS, etc.) will require a longer period of time — at the best case by RIO +30 summit in 2022.

Step six. A condition for the implementation of the long-term strategy proposed by scientists is its perception by global civil society, and, first of all, by the leaders of the 2020s generation. And for this it is necessary to break the information blockade of new ideas and recommendations, to make them available to millions of people of different ages and in different countries. It is necessary to remember the point of Karl Marx: ideas become a material force as soon as it grips the masses.

To implement this step it is proposed two main ways.

One is the spread of new ideas through the information channels — not only the publication of monographs and brochures in different languages, but the substantive content of modern information networks. To do this, it is used a variety of ways:

First, publication and posting on the Internet of monographs and brochures in different languages — both on paper and

in electronic form, SKII together with INES prepared and published several e-anthologies “The Establishment of Post-industrial Paradigm of Social Sciences” (2010), “The Long-term strategy for Partnership of Civilizations” (2011), “Theory, History and Future of Civilizations. Their Dialogue and Partnership” (2012).

Second, the use of Internet channels Russian-English scientific and educational portal “New paradigm” (www.newparadigm.ru); it is maintained from 2006, now it comprises of about 30 websites.

Third, publication from 2011 of the international research and education magazine “Partnership of Civilizations” in Russian, English, some issues — in Arabic.

Another way — to implement new ideas through the system of education. To

do this, it is established the Open University for Dialogue of Civilizations, published or prepared course-books for it — “Civilization: Past and Future” (published in Russian, English and Arabic), “Dialogue and Partnership of Civilizations”, “Strategy for Global Sustainable Development Based on Partnership of Civilizations”. Organization together with leading universities in Russia and other countries of classes in a variety of forms in the subjects of the University will contribute to the development of new ideas and recommendations by the leaders of the next generation.

Therefore, the prerequisites for these six steps of a total duration of about half a century are real. The matter is now how to adequately go this historic path, the remaining three steps.



Integralism of Pitirim Sorokin: Key to a New Civilizational Paradigm



Revolutions in Civilizational Dynamics

One of the central and most complicated problems in the cyclical dynamics of civilizations is revolutions occurring from time to time, a kind of bifurcation points marking the beginning of a new sociopolitical cycle.

Revolutionary upheavals leave nobody indifferent. Ones praise them, others curse. A duty of scientists is not ethical estimations, but impartial and as far as possible complete analysis of this social phenomenon. But here we observe a large diversity of approaches, views, opinions, appraisals and forecasts. Let's not classify them, but formulate our own understanding in terms of the role of revolution in the civilizational dynamics. Let's formulate major postulates of our theory.

1. *Revolution expresses a qualitative impetus in the development of a world or local civilization or its elements, its change over to a new state, a transfer (following a crisis) to a new phase of a life cycle or a new cycle. It is generated by a boiled up mass of contradictions in the development of a system or subsystem and is a way to settle these contradictions. In terms of socio-genetics a revolution is a period when the renewal and clearing of a genetic row (genotype) of the system occurs, the action of regularities of variation and selection declares itself in the acute form. In terms of the regularities of cyclical dynamics, a crisis of the system gives rise to a revolution and it is a method of settlement of contradictions caused by it. A revolution becomes an impulse to a transition of the mankind to a new stage in the development of civilizations or to a new civilization.*

** Fragment of Chapter 9.
"Cyclical Dynamics of Socio-Political System, Revolutions and Wars" from the book:
Kuzyk B.N., Yakovets Yu.V.,
Civilizations: Theory, History,
Dialogue and the Future.
Vol. 1. A Theory and History
of Civilizations. M.: Institute
for Economic Strategies,
2006, pp. 392-408.*

In the period of revolution the system becomes unstable, disorganized (according to A.A. Bogdanov), when many trajectories of its further dynamics are possible and sometimes even an accidental impetus is enough to radically change the trajectory. A revolution expresses the gist, the aspect of such change. After the revolution the selected trajectory of dynamics of civilization becomes stable again and also inertial, evolving its potential of a new phase of a life cycle with respect to the given civilization or its heir.

2. *Revolutions appeared together with the emergence of civilizations, developed and altered together with them.* The very emergence of civilizations was the result of two primary social revolutions: the Neolithic revolution that resulted about 10 millennia ago in the emergence of reproductive economy and social system based on it (the Neolithic world civilization) and the revolution of the Bronze Age (end of the 4th — beginning of the 3rd millennium B.C.), when local civilizations, classes, state, social strata, market with its major categories appeared. Each following step in the development of the global civilization — transition to the next world civilization or a major stage in its development, the establishment of a new generation of a local civilization or a radical turn in the trajectory of its dynamics — began from the revolutionary transformation. Therefore, it is logic to consider revolutions in the flow of dynamics of civilizations as a breakpoint, bifurcation. It is also obvious that revolutionary transformations are not painful deviations in the fates of civilizations initiated by tragic accidents, but a regular, inevitable element of their cyclical genetic dynamics.

3. *Revolutions are diversified in the scope, scale, depth and consequences of transformations of civilizations and their elements.*

In a life cycle of the global civilization revolutionary waves find their expression in the transformation of the world civilization (either a change of phases of its life cycle, or the birth of the next, more progressive world civilization) and in transformations of local civilizations (formation of their new generation or a transition to a new phase of a life cycle of this or that local civilization).

Revolutions in the dynamics of the elements of civilizations cover all their six-dimensional structure — qualitative changes in the development of human population, natural-ecological state, technological, economic, social-political spheres and spiritual life of society (science, education, culture, system of ethic and religious values). All this finds its expression in the change of a sociocultural system or stages in its development.

Consequently, the world of revolutions is many-sided. In researches and discussions it should first of all be determined what the object and scale of revolutionary transformations are, their depth and place in cyclical dynamics of a system or a subsystem.

4. *The structure of revolution includes four stages:*

- *latent period* when the preconditions for revolution accumulate, its ideology forms, social forces that are ready to implement a transformation brew, its opposing forces weaken;

- *first stage* when a revolutionary breakthrough occurs, a wave of radical transformations floods the country or the civilization, destroying a part of their genotype of the system, instability in the dynamics

of the system and uncertainty of its trajectory increase;

- *second stage* when the anarchy and extremes of the previous stages are handled with, much of what was cast out unreasonably is being restored, a choice of a new trajectory for the civilizational dynamics is being made, illusions that fed the energy of masses during the overturn get shattered. Actually, the matter in question is a counterrevolution, but more often not a return to the cast out state, which exhausted its potential, but frustration of revolutionary illusions and establishment of a new cycle or phase in its development;

- *normal period* of a new cycle in the development of civilization, a phase of its life cycle when evolutionary development goes on a qualitatively new level. During this period inertia in the movement of the system along the chosen trajectory increases.

The length of the revolutionary transformations stage, their depth is unequal for various types of cycles.

5. Each revolution has its epicenter and its leaders; it gradually embraces the periphery, involving a wider circle of social strata and countries in its sphere. For instance, Great Britain became the epicenter for the industrial revolution, France — for bourgeois-democratic, Russia — for socialist revolutions. In each period of the history of civilizations epicenters and driving forces of revolutionary overturns may change. A kind of a «drag race» occurs. But some times it happens that a revolutionary overturn requires a considerable adjustment (as it was the case with a wave of socialist revolutions in the 20th century) or a vector of radical transformation has been chosen erroneously and leads back and not forward (a wave of neoliberal-

transformations in Russia and other post-Soviet countries). With time this historical zigzag will be adjusted, but the price for countries and civilizations is high.

6. Revolutions, as a rule, are accompanied by serious losses for society, a partial destruction of productive forces, breaking of traditions, a growth of disorderliness, death of people, but their final result is usually a transition to a new, higher state of civilization, a new coil in the civilizational spiral. Revolution is a price that society has to pay for the implementation of ripe transformations. This price may be minimal (in «velvet revolutions») or maximum (for instance, a many-year war follows after a relatively bloodless revolution as it was in Russia).

A theoretical comprehension of revolutions and their place in the transformation of society started already in the 18th–19th centuries related to a wave of bourgeois-democratic revolutions. *Karl Marx* and *Friedrich Engels* for whom a revolutionary violence was an indispensable element of historical materialism made a weighty contribution to the formulation of this theory.

At the beginning of the 20th century *V.I. Lenin* became a prominent theoretician and practitioner of sociopolitical revolutions who not only disclosed the preconditions, content, social forces and mechanism underlying a socialist revolution, but he managed an experiment of large dimensions to implement it in Russia — with a view that it would develop into the world revolution. Although at the first stage of the revolution a wave of transformations went considerably farther than it was thought, the final result, as usual, turned out to be quite far from the ideal, nevertheless, one should not underestimate the significance

of the implemented revolution. It has become a landmark at the completing stage of a life cycle of the industrial world civilization and reversed the trajectory of the local Russian civilization, although at an exorbitant price for Russia.

Probably, the deepest sociological foundation of the theory of revolutions was suggested by Pitirim Sorokin in the book written by hot scents of revolutions in Russia (where the author has had no small share in it) in 1922–1923, published in English in the USA in 1925, and in Russia based on the original Russian copy in 2005 [182]. The field of his inquiries is social-political revolutions evolving in various civilizations beginning from the ancient Egyptian and ending with Russian revolutions of 1905, February and October of 1917. A special focus is made on the Russian revolution: «It also deserves such focus of attention because in terms of its depth and scope it is one of the greatest revolutions and because I had an opportunity to study it directly and because it cast light upon many sides of previous revolutions» [ibid, p. 25]. Let's dwell on the fundamentals of the theory of revolution suggested by Pitirim Sorokin — moreover, it could help to grasp the essence and outlooks of deep transformations going on in the world and Russia at the end of the 20th — first half of the 21st century (bearing in mind that the matter in question is mainly social-political revolutions and their influence on the dynamics of civilizations).

1. Investigating the *major causes of revolutions* Pitirim Sorokin sees them in impossibility for the major part of society to satisfy their major and minimum required instincts [ibid, p. 219]. According to Pitirim Sorokin these major infringed instincts include [ibid, p. 219—220]:

- *food demand* (food reflex); hunger is one of the reasons for disturbances and revolutions;

- *reflexes of personal safety* (capital punishments of innocent people, massacres, bloody war can become a cause of riots);

- *reflexes of group safety* (people defend their family members, relatives, coreligionists against insults of objects of worship);

- *demands for habitat, clothes, heat* to minimum extent;

- *sex reflexes* (otherwise, raping of wives and daughters and forced marriages occur);

- *property instincts* (a social outbreak is inevitable if the majority of citizens live in poverty while a small group of people have enormous riches);

- *an instinct of self-expression and self-dignity* (discontent is caused by ignoring of merits and accomplishments of one group of people with simultaneous overestimation of less worthy people);

- *instincts of bellicosity, struggle and competition, creative work, diversity and adventures, reflex of freedom* [ibid, p. 219—220].

These infringements should embrace the absolute majority of people or at least a considerable part of society to lead to revolution. Pitirim Sorokin also observes such precondition for revolution as «a disability of the groups of order to balance through a fundamentally strengthened braking the increased pressure of infringed reflexes» [ibid, p. 221].

Such sociological explanation of the reasons of the revolution is basically correct. *V.I. Lenin* gave a similar characteristics of a revolutionary situation — when the lower classes do not want, and the upper classes are unable to keep the existing order. However, one should highlight also

deeper causes for revolutions in their civilizational understanding, the causes of a more fundamental order. They comprise an exhaustion of the potential of existing technological, ecological and economic modes of production, established state political and sociocultural system, their inability to meet the increased demands of popular majority, increased polarization of the confronting social forces and the inability of the ruling section to settle such contradictions in a timely manner by peaceful, evolutionary way.

2. Pitirim Sorokin gives a profound sociological evaluation of changes in the behavior of people during revolutions. Revolution is first of all a certain change in the behavior of society members, their psychics and ideology, convictions and beliefs, morals and evaluations [ibid, p. 26]. Such changes are characterized by mass character, rapidity and sharpness, specific nature, intensive circulation, social regrouping, instability and permanent fluctuations in the mood of society [ibid, p. 38—39]. A state-political revolution is characterized at the first stage by extinction of reaction to obey with a major part of citizens [ibid, p. 55]. Society either begins to die or a new obedience reflexes spring up [ibid, p. 56]. At the first stage labor reflexes are also gradually fading, at the second stage they are engrafted again [ibid, p. 65]. Deformation of property reflexes occurs, all efforts are aimed at takeover of other people's possessions, which has to be braked at the second stage [ibid, p.73—74]; avarice, greediness, grab hypertrophy [ibid, p. 83]; sexual reflexes deform, sexual breadth grows including sexual per versions [ibid, p. 83—84]. The first stage of revolution leads to demoralization, weakening of religious, moral-legal, esthetic restrictions, a

number of crimes against people increase [ibid, p. 94—96]. The society is lashed with robberies, brigandage, thefts, frauds, bribery, cheating and other property crimes [ibid, p. 106]. The second period of revolution gives rise to the revival and a new inoculation of failed legal, moral and religious reflexes [ibid, p. 111]. Simplification of the mind activity occurs, thus increasing a number of psychic illnesses. It contributes to success of extreme (anarchic or, on the contrary, reactionary and chauvinistic) theories [ibid, p. 121].

3. *Revolution (if it is followed by a civil war) influences negatively the demographic processes: it reduces the number of population; leads to a rise in a curve of mortality and a fall in a curve of birthrate; worsens a qualitative population composition: «Biologically most healthy, energetically able-bodied mainly die there; psychologically — most strong-willed, talented and mentally developed; morally — most well-conditioned with enduring moral reflexes»* [ibid, p. 125]. At the same time genetic fund of positive features of people worsens, thus contributing to their degradation and degeneration; viability and health of surviving sections of population decline. The data confirms P. Sorokin's theory: thus the population of the Soviet republics reduced by 15—16 mln. people from 1917 to 1922 [ibid]. Similar processes were observed in other revolutions — English, French and Chinese.

4. *In the period of revolutions a social aggregate deteriorates, radical changes occur in the structure of society, social mobility increases many times. In the second period of revolution a return to old, a reverse circulation and reduction in the amplitude of fluctuations of the sizes of groups, restoration of an old mechanism*

of selection and distribution of individuals are observed [ibid, p. 146]. Certain classes and social groups vanish from the historical arena, others emerge.

5. *Radical changes of social processes occur* during revolutions. At the first stage of revolutions the organization of society deforms towards the unregulated anarchic autonomy; however, it is quickly replaced by despotic etatism that begins to fall with the end of the revolution [ibid, p. 178—179]. At the second stage autonomy reduces, rights and liberties of citizens, interference, guardianship and regulatory functions of power increase; freedom of word, press, associations, assemblies is brought bring to naught, freedom of teaching, upbringing, education and movement is restricted [ibid, p. 179, 182]. A decline in production is observed in the country, general impoverishment, economic inequality intensifies, economic life of society become disorganized [ibid, p. 186]. Growth of governmentalisation leads to the replacement of an initiative entrepreneur impelled by stimuli of benefits and risk by state officials devoid of such stimuli [ibid, p. 194]. Minuses of governmentalisation intensify ten times due to illselection and absolute non-professionalism of newly made leaders; a huge army of officialdom slows down the development of the country [ibid, p. 195].

6. *The influence of revolution on the spiritual life of society is controversial*. On the one hand, revolution acts as a reagent helping tell «pseudo-knowledge» and «pseudo-experience» from actual knowledge and experience; representing a colossal and direct not indirectly bookish «school-life» the revolution gives good lessons, «in some aspects leads to the enrichment of knowledge and experience» [ibid, p. 196].

Revolution fosters innovation and gives the society some new necessary experience, «excites interest, expands mental fore cast» [ibid, p. 198].

At the completion stage of revolution its ideology of the first period declines and conservative theories, calling for destruction of the very conditions of the revolutionary development, become popular. [ibid, p. 204].

7. *In any revolution the law of social illusionism is operative*. The result of revolution always turns out to be quite different from the promised at first, contradictory to its slogans. What is more, the negative consequences of the revolution turn out to be most severe for the least defended classes [ibid, p. 217]. It is confirmed by experience of all great revolutions.

The book of Pitirim Sorokin written under his recent impressions of involvement — on the defeated side — in the Russian revolution, bears the stamp of such impressions and feelings and can't provide a complete and objective picture of revolutionary transformations in society, the more so — their civilizational aspect. Nevertheless, it provides a vivid sociological description of causes, mechanisms, stages and consequences of the revolution. And much from the said by P. Sorokin amazingly reminds the processes, which occurred in Russia and in certain other countries in the 90s. In his further books — «Social and Cultural Dynamics» [183], «The Major Tendencies of Our Time» [181] — Pitirim Sorokin demonstrates a wider and more objective approach to revolutionary transformations in various civilizations and in various sides of life of society.

However, let's refer to another book specially dedicated to the role of revolution in terms of a comparative study of

civilizations — treatise of Sh. Eisenstadt «The Revolution and Transformation of Society. A Comparative Study of Civilizations», which appeared in 1978 and was published in Russia only in 1999 [236].

A sociological approach to understanding of the contents, forms and consequences of revolutions and their role in the dynamics of traditional societies and civilizations of new time prevail in this treatise. The author evaluates revolutions as movements in society targeted at radical transformations, at the future: «The great revolutions may be viewed as most dramatic, and maybe most successful attempts in the history of mankind to implement ethnic ideas on the macro level... Orientation for the future was characteristic of revolutions as a central element in the cultural plan of the contemporaneity» [ibid, p. 30]. This predetermined the leading role of independent intellectuals in the revolutionary transformations, which are the most intensive form of social changes: «Revolutions are characterized as the most integral, violent and conscious process of all social movements. It shows the utmost expression of free will and deep feelings, demonstrates outstanding organizational abilities and highly developed ideology of a social protest» [ibid, p. 44]. From this viewpoint revolutions of New time are analyzed and compared as the stages of the worldwide spread of civilization which began to form in Western Europe and North America. [ibid, p. 234]. This also refers to a socialist type of revolutions of contemporary time that were generated by the Western European civilization: «The beginning of development of socialism in Western Europe was predetermined by specifics of the European civilization. The diffusion of socialism outside Europe was predeter-

mined by the spread of civilization of the New time and was accompanied by the disclosing of fundamental contradictions inherent to it» [ibid, p. 239].

The crucial external factors of revolutions were warfare between the states. However, internal factors comprised economic changes, structural shifts associated with expansion of markets and technological novelties, establishment of a new mode of production and new ideological systems, struggle between elites, mass rising of the people, religious and ideological movements [ibid, p. 245].

It should be noted that sociopolitical revolutions accompanied the whole history of civilizations as the most vivid form of radical changes and followed both a change of cycles in their dynamics (and the birth of new local civilizations at times), a change of world civilizations and also a transition to new stages, phases of their life cycle.

Let's consider the theory and history of revolutions in the aspect of interest to us: revolutions in the dynamics of global, world and local civilizations.

The essence of revolutionary overturns in the dynamics of civilizations is in their radical transformation, which is completed with the emergence of a new civilization or a transition to a new major stage in its development, radical changes in its structure and acceleration of the transformation rates. Revolutions serve as the turning points in the development of civilization, change its genotype (hereditary nucleus), clearing it from obsolete, overage elements and enriches it with new elements permitting it to adapt to internal and external conditions of its development. This is a comparatively long term

and painful process, often accompanied by social catastrophes, but it is necessary for the improvement of viability and advance of this sophisticated social organism.

From the viewpoint of the civilizational dynamics the following *types of civilizational revolutions may be defined* (fig. 1):

- *revolutions in the dynamics of the global civilization* associated with its emergence (Neolithic Revolution), transition to a new historical super cycle and the next world civilization as a major stage of a life cycle of the global civilization. The industrial revolution that conditioned a transition to the industrial world civilization within the second historical super cycle may be taken as an example;

- *revolutions in the development of world civilizations* inaugurating their establishment (for instance, an overturn in the development of society in the establishment of the early class world civilization at the end of the 6th—beginning of the 3rd millennia B.C.) or a transition to a new major stage in its development;

- *revolutions in the dynamics of local civilizations* finding expression in the establishment of a new generation of local civilizations (which we observe at the end of the 20th — beginning of the 21st century) or a certain local civilization (for instance, Western European, Mongolian).

It is also possible to speak about a *counter-revolutionary overturn* in a life cycle of this or that local civilization — when it is making a historical zigzag, moving to the reverse direction of the general civilizational progress (thus the overturn of the beginning of the 90s may be evaluated in this way because it led to the disintegration of the Eurasian civilization and turned the Russian civilization back to the deformed system of spontaneous capitalism of the

19th century). In this case one could speak about an epochal anti-innovation.

The structure of civilizational revolution is inhomogeneous. This or that driving element from the composition of the genotype separates itself causing qualitative transformations in other elements. In one case it may be a change of a sociocultural system, in another — the development of new technological, economic and ecological modes of production, in the third — radical changes in the social structure and the state-political system of society (social or political revolutions).

In any case, a revolution is restricted in time, although it may last from a few weeks, months, years to a few decades, and even (as at the early development stages of society) a few centuries. During this time it usually passes, according to Pitirim Sorokin, two stages. At the stage of revolutionary breakthrough the ideals, driving motives of revolutions are implemented, and a part of the heritable nucleus is destroyed. At the stage of a partial counterrevolution radical adjustments are made into these ideals, driving forces are changed, unreasonable violations of the genotype are restored and a new system, a new civilization or its stage establishes itself. Thus the revolutionary breakthrough gives place to a relatively smooth, evolutionary development fixing the changes, which occurred in the revolutionary period (their major, historically reasonable part).

If a *space aspect of civilizational revolution is taken*, we can mark the epicenter, where from it originates (for instance, Great Britain — for an industrial revolution), the area of development (for the same industrial revolution — leading countries of Western Europe and the USA), periphery,

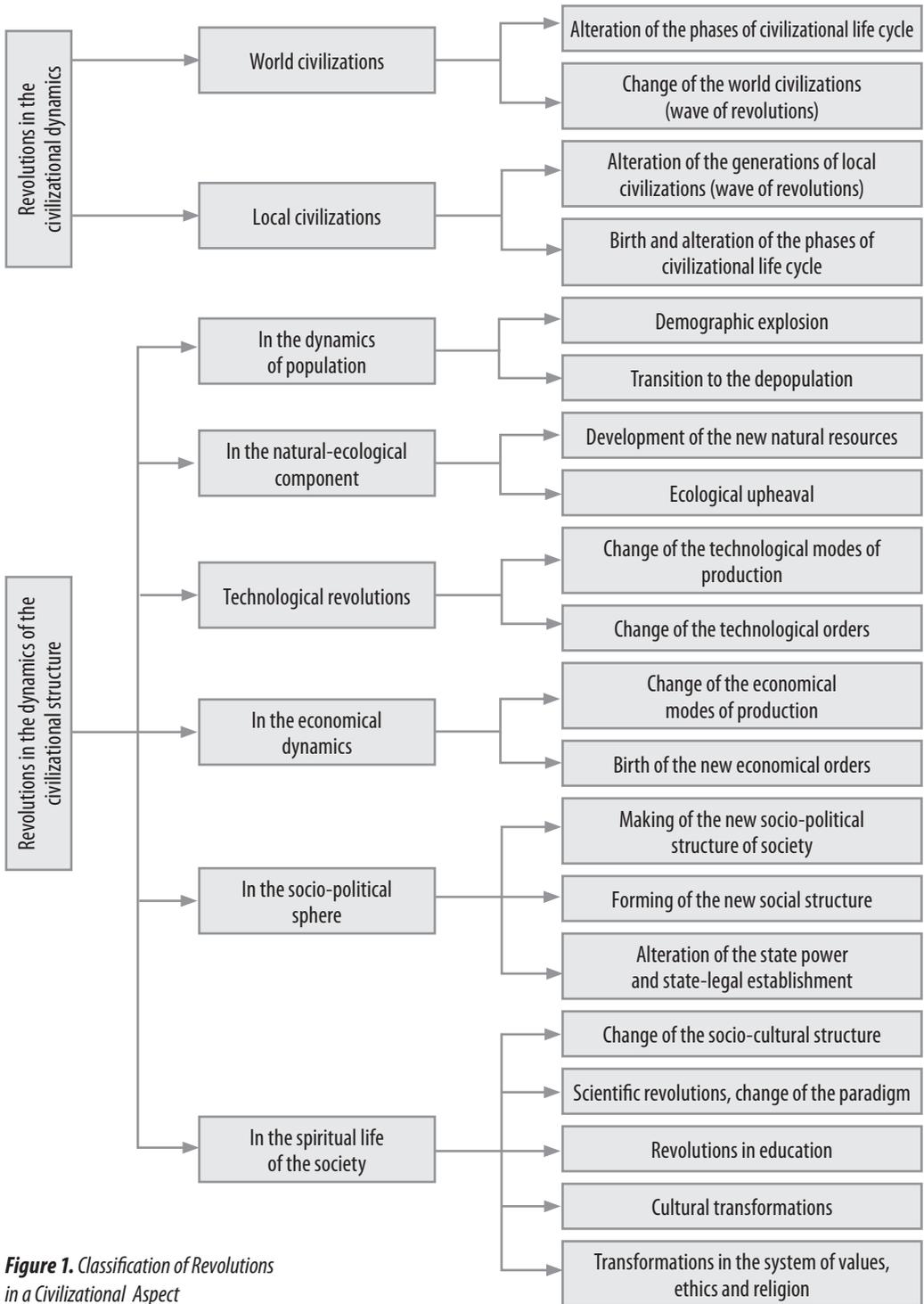


Figure 1. Classification of Revolutions in a Civilizational Aspect

where the process of mastering the revolution occurs with lagging for one or two historical steps (for instance, Russia in the 19th century) and a «historical marsh», which remains long at the previous stages of development and obeys civilizations, which have shot ahead (India and Africa in the period of the colonial dominance may be taken as an example).

Now let's turn to the *history of revolutions in the dynamics of civilizations* (in brief as a more complete and specific description of such revolutions is provided in the next part of our book).

The Neolithic revolution is the starting point of this history, in the course and as a result of which technological, ecological and economic components of the hereditary genotype were formed (reproductive economy, social division of labor, transformation of natural resources, the beginnings of property stratification, social stratification, exchange of commodities and market). However, the tribal, pre history system, primitive ideational sociocultural order persisted, and local civilizations did not form yet. The foundation of the global and first world civilization was laid, the prehistory ended and the countdown of the history of society began.

The Civilizational revolution of the early class society (the end of the 6th — beginning of the 3rd millennium B.C.) completed the formation of the civilizational genotype, it laid the foundation of the second world civilization and the first generation of local civilizations. A sociocultural system transformed — science, system of education, hierarchically organized religions as an institutional setting emerged. We may take Ancient Egypt as an example, where pharaoh *Ikhnoton* who ruled in 1419—1400 B.C. undertook the first, but failed

attempt to introduce a monotheistic religion. In the period of early-class civilization an overturn occurred in technology, ecology and economy — with mastering of metal tools, establishment of irrigation systems in the valleys of great historical rivers, establishment of the network of cities, development of craft and construction, market institutions. A sociopolitical floor of the civilizational «pyramid» was built on: the states, classes, political systems, slavery, rigid political stratification emerged. The building of civilization established itself in the entirety of elements making it. The significance of such revolution is often underestimated, only paying a tribute to the «axial age» according to Karl Jaspers; meanwhile, the enormity of transformations in society, a total of epochal innovations surpassed by far what was reached by civilizational revolutions of later periods.

The Civilizational revolution of the ancient period (the first thirds of the 1st millennium B.C.) had as its asset not only the mastering of iron weapons and tools, but a considerable expansion of the civilizational area, development of the second generation of local civilizations and also the emergence of the world empires, nascence of democracy in the Greek cities — formation of all components making the genotype of civilization. At the same time the risk that a life cycle of the global civilization (humankind) will come to an end as a result of the clash among civilizations, global thermonuclear war, major technogenic catastrophe or environmental catastrophe increases.

Under the optimistic scenario the development of the global civilization will continue, and each major stage will begin with civilizational revolutions, which will

be studied, cognized and foreseen by the thinkers of the future.

The contents of contemporary transitional in the dynamics of civilizations are viewed differently in the scientific community. Thus, I.G. Yakovenko proceeds from the assumption that as the «history of humankind goes through the history of civilizations, and a life cycle inherent to civilizations is birth, development, decaying, the universal history is cyclical. Both cycles of the evolvement of generation and a period of a relative timelessness or “dark centuries” separating the decaying of one generation of civilizations from the birth of the second could be traced in it. A transition from one generation of civilizations to another is always a change in a historical quality, in other words — revolution» [220, p. 107]. A similar civilizational revolution — a change in generations of civilizations — is going on nowadays: «We are inside the process of the change of historical periods... The logic of the world-historical process allows to assume that after completion of a transitional period a new generation of local civilizations will be formed» [ibid, p. 111]. One can agree with this position.

E.V. Saiko holds another view on the outcome of a contemporary overturn assuming that its result will be the disappearance of civilizations from the historical arena: «At present not only characteristics and structures inherent both to the European model civilizations and models of civilizations of new time are being disintegrated, but also many base foundations of functioning and integrative rules of organization of society, which operate actively and ensure objectively the directivity of historical development, as well as principles and forms of reproduction

of society throughout a few millennia of history of civilizations in its phasic definition... The conditions are being created for the formation of elements, structures, system entities not inherent to the system of civilizations, falling out of the regularities of its functioning... All occurring changes permit to speak about the historical depletion of the system of societies of civilization as the emergence of the new, indicating its intensification, its further development, an unprecedented efflorescence of sciences and arts and a short triumph of an integral sociocultural system, which was followed by a sensual order.

The Revolution of the period of the formation of the medieval world civilization covered (in the epicenter) the period of the 5th–8th centuries and was of a long and deep nature, being associated with the formation of the second historical super cycle, the fourth world civilization, third generation of local civilizations, establishment of a feudal sociopolitical system and ideational sociocultural system, dominance of world religions and ecclesiastical institutions representing them. The epicenter of revolutionary transformations shifted to the East, and then returned to Western Europe.

The Revolution of the period of the early industrial civilization (14th–15th centuries) was of a less radical nature. Its outstanding achievements included the efflorescence of science and arts in the Renaissance, establishment of manufactories, development of capitalism and formation of the «third class» (the driving force of the Netherlands and English bourgeois revolutions), formation of the fourth generation of local civilizations and diffusion of sensual sociocultural system, great scientific revolution and the revolution in educa-

tion. The elimination of local civilizations of the New World, of proto-civilizational or pre-civilizational societies of Africa and Australia were of the counterrevolutionary nature.

These tendencies were fixed by the revolution of the period of the establishment of the industrial civilization (the last third of the 18th — beginning of the 19th century), the main contents of which became the industrial revolution, political revolution in France, North America, consolidation of colonial empires, diffusion of a bourgeois democratic system. The world wars of the 20th century, establishment of totalitarian regimes in the middle of the 20th century may be viewed as the counterrevolutions of the period of decline of the industrial civilization.

From the end of the 20th century came the time for the development of the postindustrial civilizational revolution. It has a deeper and more radical nature in comparison with the previous revolution as a transition to the third historical super cycle in the development of the global civilization underlies it; formation of the fifth generation of local civilizations, establishment of the integral sociocultural

system, humanistically noospheric society took place. The outlines of such revolution are just taking shape. But it is obvious that it will take the most part of the 21st century and will lead to a radical transpoment takes place alongside with the destruction of the basis foundation of the system» [ibid, p. 48].

It seems that there are no sufficient grounds for making a conclusion about such radical revolution (and more exactly — a counter revolution as the elimination of civilizational diversity would be a step back in the dynamics of society). The basic foundations for both a periodic change of world civilizations and their implementation in the change of generations of local civilizations do not only persist, but also intensify in a new historical super cycle, with the formation of humanistically noospheric postindustrial society. It is prematurely to chant a requiem for local civilizations.

The theory of revolutions helps not only to evaluate correctly the reasons, essence and consequences of turning points in the cyclical dynamics of civilizations, but also to foresee such overturns in the future and to implement them in proper time and with few losses for society.